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OUTLINES OF
POLITICAL ECONOMY

utility because it is chosen in a cool hour by a wise man who is not mistaken in his forecasts, then to say that demand measures utility or satisfaction is merely to commit ourselves unnecessarily to an inference from the undoubted fact that demand measures choice or preference.

Systems of demand.—Some of the most elemental experiences of life have to be pointed out to most of us before we become alive to their existence. The first thing to observe about demand is one of these elemental experiences. It is that all people demand things in groups. Quite strictly speaking, it is questionable whether there is such thing as a detached demand for any article. A student's demands, for instance, for books, ink, pens, paper, a quiet study, leisure, and his numerous other requirements as a student, are all constituents of one massive group demand. Individual things are almost always, if not invariably, demanded as parts of a systematic whole. This systematic whole, or arrangement of grouped demands, is moulded by a variety of influences. In the first place, it is shaped by individual tastes, and, in the second place, by some *standard of life* or *standard of comfort* (see p. 13), that is by the conventional ideas prevalent at the time as to the amount and kind of expenditure expected of the members of each particular social class or grade.

A person's system of demand is only gradually built up; and it is only gradually modified. In its initial form it is handed down to him by his parents, and this inheritance is supplemented, subtracted from, and remodelled, as an outcome of his education and experience and the social influences brought to bear upon him. So far as a person is consciously active in the construction of his standard of living, he has to devise that particular compromise, between his individual tastes and the expectations of his friends and his class, which yields him most satisfaction ("satisfaction" as defined on

margin of purchase the things selected are equally fit to satisfy us in relation to their cost.

The law of substitution being so fundamental, it is peculiarly essential that no error should be made in interpreting it. It is, therefore, worth while pointing out that the demand prices of different people do not measure the utilities of things as between different people. They cannot, because there is no bridge to connect the utility enjoyed by one person with the utility enjoyed by another, according to the view of utility taken in this book. The so-called utilities obtained by me from different things are regarded here simply as conventional indices used to express my preferences, or, as one might say, the relative degrees of expected conduciveness of different things to the satisfaction of my wants and purposes in life; and evidently no such preferential relation can possibly hold as between the use of a thing by me and the use of a thing by somebody else. Moreover, even if it were feasible to compare the utilities enjoyed by one person with those enjoyed by another person, it would still be untrue that the demand prices of different people measured the utilities of things to different people. They could not, because people would still differ with respect to the range and intensity of their wants, and all people would not have the same amount of money at their disposal.

The last point may be expanded since it broaches questions of practical importance. The richer we are the more are we usually willing to pay for what we want, because the lower is the marginal utility of money likely to be to us. Hence the sacrifice made by the rich man is less than the sacrifice made by the poor man when both pay the same price for something, and these sacrifices measure the marginal utility to each of what is bought. The marginal utility of money (which is sometimes spoken of shortly as the *utility of money*) means the utility that would be lost through the loss of a

OUTLINES OF POLITICAL ECONOMY

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These are only examples. The reader will see that other combinations are possible. To save space, these have not been added to the list.

Illustrations drawn from the cotton industry will make plain what is meant. A and B stand respectively for cotton-spinning and cotton manufacturing (that is weaving). The letter "a" means the commercial function of buying raw cotton, "b" means selling cotton fabrics, "a'" means selling yarn, "b'" means buying yarn. The formula (a, A, B, b) means that a single business takes responsibility for the purchase of its raw material (through a buyer, perhaps, who is a member or employee of the firm), assuming the risk of fluctuation in price; both spins and weaves; and sells direct, as it can, to retailers after it has produced. The formula (a), (A, B), (b), means that a wholesale house (b), which may engage in the home trade or foreign trade, places orders with the spinning and manufacturing firm (A, B) and that the latter arranges for its supplies of cotton, to meet its orders, through an independent cotton-broking firm (a) which takes the risk of fluctuation in the price of the cotton needed. In the next formula (a), (A, a'), (b', B), (b) spinning and manufacturing are represented as having separated into independent businesses. The spinning firm sells its yarn through its seller and the manufacturing firm buys its yarn through its own buyer. According to the next formula (a), (A), (a', b'), (B), (b), an independent yarn agent (a', b') has appeared through whom (A) disposes of its yarn and (B) buys its yarn. There would, of course, be many yarn agents and many spinners and so forth; and the yarn agents might be simply agents (that is intermediaries taking no risks) or they might be dealers in yarns taking risks.

It seldom happens that one type of organization alone triumphs in an industry. Usually several types will be found side by side. The conditions under which specialization by processes appears in an industry have already been noted, but without being analysed in detail. Apart from the economies of specialization, outstanding conditions, all of which need not be present, would seem to be (1) that the industry should be concentrated in a small locality, so that marketing at a common marketing centre wastes little time and cost of transport is not high; (2) that it should be as easy for a manufacturer undertaking one of the later processes in the com-

“And as he had acquired absolutely nothing about political economy or about logic, and was therefore at the mercy of the first agreeable sophistry that might take his fancy by storm, his unfitness to commence the business of being a citizen almost reached perfection.”—“Clayhanger,” by ARNOLD BENNETT.

If D rose, the level of S would drop (because the power to save would be greater) and the volume of capital used in the community would gradually expand till a new position of equilibrium was reached. An independent subsidence of S would also lead to the employment of a greater amount of capital. The effect of a drop of D , or an elevation of S , would be gradually to contract the capital in use.

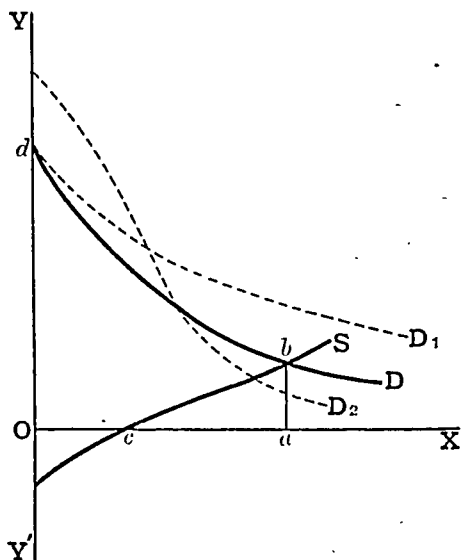


FIG. 16.

The effects of new inventions on demand may be shown by curves of which D_1 and D_2 are samples. A curve of the type D_2 takes the place of D if inventions *intensify* the demand for capital; but the new curve will be of the type D_1 if demand is *extensified* (see pp. 291-2). We must not, of course, notice the intersection of D_2 with S , because, when the demand curve alters, inasmuch as it alters income, the supply curve is altered. To find the effect of inventions which transform D into D_2 , we should have to construct a new S which would be below the old S .

PREFACE.

THIS third edition is the result of a thorough revision and partial expansion which have involved a complete resetting of the type. The use of the book for teaching had indicated many ways in which it could be improved ; and further additions were rendered desirable by recent economic events connected with the war. Two final chapters on the development of Political Economy have also been added.

On a first perusal, all parts in small print should be omitted ; and, in the first instance, only a hasty reading of Book I would be advisable. The diagrams are intended only for those who find their understanding aided by diagrams. In every case, these symbolic demonstrations are merely supplementary to the argument in words, which has been made complete without them.

My obligations to the writings of other economists, which are none the less though not always apparent, are too numerous to mention ; but my great indebtedness to Dr. Marshall will be apparent throughout. I have also profited from many criticisms and suggestions, for which I desire to express my gratitude ; and in particular I have most cordially to thank Mr. H. D. Henderson and Mr. C. K. Hobson for revising the proofs of the present edition, and my wife for constant help.

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superstition, and such faults as he fell into should be attributed in no small measure to the imperfections of his technical apparatus in the then primitive state of economic science. No doubt his distrust of politicians, whom he deemed "crafty and insidious," predisposed him to accept Hutcheson's doctrine; but Adam Smith was nothing if not shrewd, and he was under no illusions about the incentives of the ordinary business man. For the details of his purely economic analysis, the reader must be referred to the "Wealth of Nations". The germ at least of modern theories will be found where there is error, and error is seldom made prominent or left undiluted with truth, for Adam Smith was not only gifted with insight but was essentially a man of sane and cautious judgment. With the "Wealth of Nations" this account of the development of Political Economy comes to a natural halting place.

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*Sections marked * which are in small print, and the occasional paragraphs in small print, may be omitted altogether on a first reading. Sections marked ** contain diagrammatic expositions and should not be read by those to whom diagrams are confusing or of little or no assistance.*

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BOOK I.

SCOPE AND METHOD.¹

CHAPTER I.

NATURE AND SCOPE OF POLITICAL ECONOMY.

Definition.—"Political Economy" is derived from the three Greek words, πόλις, a state or organized community, οἶκος, a house or home, and νόμος, law. It means, therefore, according to its derivation, the law of household management in its application to communities. Whether the old term "political economy" in its original significance appropriately designates the modern study of which an outline will be given in this book, will become apparent to the reader as he or she proceeds. To-day political-economy, or, as it is sometimes called, economics, treats of all the actions of human beings in relation to wealth, including the attitude of people to wealth, the responses of Nature to their attacks on her resources, and the conditions of their productive efficiency, as well as the making, exchanging, sharing, and using of wealth. "Wealth" may be left undefined for the present. For preliminary purposes, it may be presumed that the reader has a sufficiently accurate conception of what wealth is.

Political economy, as its definition makes plain, is a social

¹ N.B.—Sections containing diagrams are merely supplementary, and may, therefore, be studied or not at the choice of the reader, as may also any other parts in small print.

study. It may be classified as a branch of sociology, and sociology is the study of the natures and activities of individuals, regarded as members of communities, and of the relations between them. A study, or systematized body of knowledge, is defined by (1) its data and (2) its point of view. The data of sociology may be broadly described as all social facts, and the data of political economy as all those social facts which have reference to wealth.

The two departments of sociology which have been most systematized are political economy or economics, and politics. Of these two, economics is the more capable of being systematized and is the more highly systematized—for reasons to be explained (p. 18). The rest of sociology is as yet only imperfectly systematized. Much material has yet to be collected, and much classification has yet to be attempted, before any considerable number of fruitful generalizations can be looked for.

Economics, we have noticed, is differentiated from general sociology by the fact that the activities which primarily occupy its attention are those which have reference to wealth. Politics is distinguished similarly by the reference of its data to government; but as some human action has reference at the same time to wealth and to government—public finance and factory legislation, for instance—being subjects which relate to both—economics and politics overlap to some extent.

Positive and normative sciences and arts.—So far the term “science” has been avoided, mainly for two reasons. The one reason is that all systematized bodies of knowledge are not sciences, some being what are ordinarily termed “arts”. The other reason is that “science” is an ambiguous term, sometimes used in a narrow sense, but sometimes in a broad sense to cover all the results of thinking about facts from whatever point of view the thinking proceeds.

There are at least two possible points of view, namely, the *positive* and the *normative*. When we assume the positive point-of-view, we take the facts of the universe as they are. When we assume the normative point of view we deal not with facts, as facts are ordinarily understood, but with the ideals of facts, or *standards*—"norm" is derived from the Latin word *norma*, meaning a rule or standard. Ethics (or the science of what conduct ought to be and why) is a normative science. All the so-called natural-sciences are positive sciences.

Before considering what a science aims at and how scientific investigation is conducted, it will be desirable to define an art. The creator of an art assumes that the attainment, if possible, of a given end has been decided upon, and tries to lay down a logical scheme of rules for its attainment. Navigation is an art; and much of the writing grouped under the heading "politics" really treats of the art of Government. The end, of which the attainment is desired, may have reference to some particular need; or it may be the ideal defined as a result of normative inquiries. Arts are sometimes known as practical sciences when attention is focused on their scientific side.

It remains to analyse the character of positive science; and much that will be said, holds equally of normative science. The object of every student of positive science is to understand a class of facts. He must first, then, think of his facts as a class, that is see them as similar in certain respects. Thus the world of space is the scope of physics: spatial facts make up the universe for physicists. But the physicist rejects all except certain aspects of these facts; he notices only their aspects as matter (however that may be interpreted) and motion. Human beings are part of the data for biologists, but merely as living organisms. As sentient and self-conscious creatures, they are also facts for the psychologist; as

engaged in governing and being governed, they are facts for the political scientist; as makers and sharers of wealth, they are facts for the economist. It is apparent at once that a flash of insight which reveals a unifying aspect of apparently diverse things is the pre-requisite of a science. The reactions of human intelligence on facts, as they are directly presented, create the universes of science.

After provisionally staking out the intellectual field to be surveyed, the scientist has to *observe, classify, and explain* his facts. The operations of observing, classifying, and explaining are by no means mechanical. They do not consist in just looking at the facts, sorting them according to their outstanding similarities and then waiting for the laws to leap out like Jack-in-the-box. The scientist does not *first* observe, *then* classify on the results of observation, *then* gather up laws which have, as it were, projected themselves. On the contrary, every process in observing, classifying, and explaining, reacts on every other, and every one necessitates minute investigation under the guidance of ideas. Explanation almost invariably compels a revision of classification, and even of the results first reached by an analysis of the facts. Sometimes, indeed, the nature of the facts is discovered by deduction from the laws connecting them. Thus it is the most advanced inquiries into the laws uniting physical facts which have given rise to the latest theories as regards the substance of the facts themselves. Again, in classifying we must have in mind what are the essential features of the facts from the point of view of the science, as opposed to their external resemblances; and we must also have in mind how their relations are to be explained. Explanation broadly refers to the enunciation of *laws*. A law is a generalization which links one change with another in the system of facts. Sometimes "law" is used more broadly, but it is convenient here to confine its reference to the relation commonly known as that of cause and effect.

Political economy embraces a positive science, a normative science, and several arts.—It will already, no doubt, have begun to dawn upon the reader that political economy is not one unified body of knowledge, but several bodies of knowledge which may be distinguished by outlook, aim, and approach. These several separate but kindred studies will be described next, with some of the more obvious relations between them. Later we must return to our preliminary inquiries and ask whether a science of society possible at all. Provisionally we shall assume that this question must be answered in the affirmative.

First we must remind ourselves that economic facts can be regarded from two points of view, namely, the normative and the positive. As on one side economic facts are a part of human conduct, the normative science of political economy is clearly a branch of ethics. We must separately recognize, then, the positive science of economics and economic ethics.

Again, because social facts cover human conduct which may be directed to different social ends, various arts of political economy are possible. Much of the literature of economics is in the form of the art. A writer assumes, for instance, that "sweating" ought to be suppressed and then demonstrates how he thinks it might be suppressed. Again there is the art of business envisaged by certain writers. It is premised that the business man desires to do the best for himself with his capital, and then it has to be discovered how in general he should act in the various circumstances in which he is likely to be placed. The study is conceived as systematized business strategy and tactics, and strategy and tactics are arts. The numerous works which have been produced on land tenure in which peasant proprietorship, *métayage*, different leasehold systems, and other arrangements, are contrasted with a practical end in view, must be grouped with the arts, though they have, of course, no relation to the

fine arts. A treatise on the fine arts might be in form scientific, of the normative order, and be properly placed under the "science of æsthetics". Further, an economic art may be related to economic ethics. After ideals have been formulated by the latter, the procedure needed for their realization may be considered, and its consideration makes up an art.

In connexion with all economic strategy and tactics, or arts of political economy, we must emphasize the importance of economic science. Action is entailed if ends are to be reached, and the prudent choice of action implies knowledge of its effects. The most developed branch of positive economic science deals with these relations of cause and effect. Also, for the study of economic ethics, a knowledge of economic science is equally a pre-requisite. The framing of social ideals is not a mere exercise of the imagination. On the contrary it proceeds largely by deduction from known facts and generalizations relating to society economically conceived. An ideal that can be recommended must be one that is not inconsistent with human nature. It must be workable. The function of a locomotive is to travel; and nobody ignorant of the principles of mechanics would try to think out the ideal locomotive. But we must never forget that human nature is adaptable and that its modification can be intentionally directed.

Positive economic science may or may not be evolutionary.—The recognition of social change brings to our notice economic writings which depict social change in what might be termed the evolutionary order. Some of these writings aim, moreover, at establishing laws or uniformities of social development. It would be as well, perhaps, to classify these writings as *evolutionary economic science*. This science is not yet an accomplished fact, but it is in the making. Most of the best works on economic history contain masses of evolutionary social science; but we must not confound the

economic history which aims at restoring and explaining the past for us, in its temporal order, with the evolutionary science which seeks to represent and explain economic progress, in its logical order, and retrogression also because change does not invariably mean advance.

Sometimes—perhaps generally—the evolutionary science of economics, which is a positive science, is known as *economic dynamics*. The positive economic science which is not evolutionary is then known by contrast as *economic statics*. There are objections, however, to adopting in this connexion the terms “statics” and “dynamics,” because in this connexion they are given meanings different from those which they bear in mathematics. In mathematics, statics refers to problems of rest and dynamics to problems of motion. But non-evolutionary economics refers to problems of motion, though it assumes that no change takes place in the fundamental nature of its data. An evolutionary science takes cognizance of the laws of change in the units with which it deals as well as in their grouping. If we choose to give the name “economic dynamics” to evolutionary economics and the name “economic statics” to non-evolutionary economics, we must remember that we are using “statics” and “dynamics” with meanings different from their mathematical ones. It goes without saying that whenever facts change in nature—as for instance biological facts—an evolutionary science results from the study of them. As the elemental facts of physics do not change in nature, so far as we are aware, there is no evolutionary science of physics.

Classification of economic studies.—To sum up we may say that the following are the studies included under economics:—

- | | |
|---------------------------|---|
| Positive economic science | { (1) non-evolutionary or static;
(2) evolutionary or dynamic. |
|---------------------------|---|

Economic history.

Economic ethics.

Practical economics or economic arts.

It goes without saying that an examination of one society, from the positive and non-evolutionary point of view, will not necessarily yield the same results as a similar examination of another society, or of the same society in another period, especially when the results are intended to be in a high degree realistic and detailed. But, as we shall learn in the next chapter, the construction of a very general economics of a non-evolutionary kind is feasible, though the finished product might prove disappointing in its proportions; and such a science, which holds broadly of every advanced Western nation under present conditions, is already an accomplished fact. Nevertheless, we must be on our guard against committing what are known as the errors of *universalism* and *perpetualism*, that is to say against assuming that generalizations which apply only locally and temporarily have a wider reference.

It follows from these reflections, that the features of a given economic art may vary from time to time and place to place. The proximate economic ideal of Holland may differ in detail from that of Italy, and likewise the best method of bringing about a given end in the one country may be at variance with the best method of bringing it about in the other.

The present work treats mainly of the elements of that positive economic science which is concerned with non-evolutionary uniformities, so far as they are common to advanced Western communities at the present time, but we shall occasionally fall into discussions which properly belong to other divisions of political economy—because by a too exclusive adherence to one range of considerations we are apt to lose grasp of, and interest in, social life as a whole.

CHAPTER II.

ASSUMPTIONS AND METHODS OF ECONOMIC SCIENCE.

Can the actions of free agents be reduced to law?—

This work treats in the main of that part of political economy which is a positive science relating to advanced Western communities. But when we think of political economy as a science akin to the natural sciences, we may begin to doubt whether a positive science of things exercising volitional initiative—of things aspiring, striving, failing, and succeeding—is possible. There is nothing self-contradictory in the conception of things as acting according to law when they have no volition. They cannot help themselves; they do not exercise choice; they are not in a position to refuse to act according to law. Subserviency to law is not inconsistent with the nature of these things. The apple cannot confute science by declining to fall to the earth. But is there not something self-contradictory in the conception of things as acting according to law when they have volition? Cannot any individual, perhaps out of sheer perversity, determine to act so as to break the uniformity of an alleged social law?

Now in this short treatise we cannot pretend to enter into the controversy between those who believe in Free Will of various degrees and those who believe in Determinism of its several kinds. It is sufficient for our purpose to recognize that a something, which we shall call "volition," distinguishes human beings, if not from animals, at least from all other forms of life, and to consider whether the action of volitional

creatures can be subject to scientific law. One of the purposes of the present discussion is to show that economics does not imply any particular view on the question of Free Will.

In dealing with the difficulty just described, we may notice in the first place that *all the experiences of a volitional creature do not come within the sphere of his choice*. If they did, our lives would be very different from what they are. We do not decide to feel pleased or sorry: we cannot help ourselves. I cannot prevent my appetite from getting satisfied if I go on eating. Nor can I prevent myself from getting tired if I go on working without cessation. Nor can I prevent myself from getting more and more inefficient as I get more and more exhausted. Examples need not be multiplied. Much of this uncontrollable experience has a direct bearing on economic uniformities, and much of it affects economic uniformities indirectly through its bearing on the preferences to which economic uniformities relate.

In the second place, we may observe that just as some of our economic experiences are governed by laws of the human organism beyond our control, so *some of our economic experiences are governed by laws of external nature beyond our control*. We get much of our income out of the responses of nature (which is external to us) to our efforts, and these responses are governed by the laws of external nature. To give one example, the law of decreasing returns, so far as it relates to such responses of external nature, derives its uniformity from the uniformity of nature.

In the third place and finally, we may notice that the economist can rely on certain generalizations, the truth of which seems to be at the mercy of *price* (in view of the volition with which the things generalized about are endowed), because man is rational in some degree and struggles to be so in a higher degree. People will not as a rule deliberately do what they think to be foolish. A man may buy a pair of

boots for 21s. 6d. when he could procure them elsewhere with no more inconvenience for 18s. 6d., if he is not aware of the existence of the cheaper shop ; but he will not of set purpose under modern conditions go to the dearer shop, providing there is no reason for his preferring to deal at the dearer shop rather than the cheaper one. That is to say, other things being equal, he will not elect to buy dear rather than cheap. He might elect to buy dear to achieve social distinction, discourage sweating or support local enterprise. But in these events other things are not equal ; motives extraneous to expense are at work, for which the economist can and does allow. Moreover, it is not entirely inconceivable that some persons might deliberately determine to buy dear to prove that economic laws were not laws in the sense that they were universally true. But persons do not act in this way in any appreciable numbers, if at all : if some few did, their actions would have the effect of a drop in a bucket. Insane persons, again, are sometimes possessed by a passion of misrule ; but economics assumes that the great majority of people at large are sane. Hence we may conclude that *the uniformity in reason implies some uniformity in human affairs*, i.e. law in human affairs. When we lay down a law of social action where volition has play, we do not allege that every man must behave in a certain way, but that in the aggregate men will actually behave in a certain way. Uniformity in the aggregate only is affirmed. It is not an avowal damaging to the conception of economics as a science to concede that certain social laws partake of universality in a less degree than most natural laws. The degree of the universality of a social law is naturally not high when its operation presupposes an abundant measure of knowledge, resource, and enterprise in the persons to whom it has reference.

The permanence of character and social assimilation.—The reader's attention may now be directed to three

very important features of the data with which the economist is primarily occupied. These features simplify his task, and permit of his fitting the material into generalizations which would otherwise be inapplicable.

One of these features consists in the fact that people's characters do not usually change so fundamentally as to lose their distinctive traits. Character is slowly acquired and as a rule only slowly modified—and our acts express our characters. I shall be pretty much the same in a year or so as I am now, and I shall therefore act then much in the same way as I do to-day. The cases in which Nature makes a leap are rare—so rare that in the consideration of aggregates they need not be allowed for. That sudden conversions take place the most sceptical must allow; nevertheless, what is true in general to-day, say of the manners and customs of colliers in South Wales, will still be approximately true in a year, or two years, or ten.

Another feature of our data is that all people are in their natures very much alike, apart from the fact that all have the gift of reason. A third feature is that under certain conditions they become alike in disposition. The processes by which people are made alike are known as processes of assimilation. They may operate physiologically or psychologically, and in both ways they are constantly at work in advanced as well as in primitive communities. Physiological assimilation is especially important to nations which are recruited from many races: through intermarriage of the several races with one another, a common racial strain tends to be generated; but certain sorts of intermixture are frequently resisted. As regards psychological assimilation, this is never absent from any society, and it has both a subconscious, or unvolitional, and a volitional side. We are far more imitative of one another than we are aware, when we share in a common life. We imitate one another deliberately, per-

haps in order to enjoy social approbation, which is only won when we conform to some extent to the ideas of others in the little worlds to which we belong; and we also imitate one another because we cannot help it. This imitation, deliberate and unintentional, expresses the instinct of gregariousness in the world of consciousness. Hence we can speak of the standard-of-life of a class. The standard of life of a class comprises the common habits of its members with reference to spending and working. Most of them tend to spend and work in pretty much the same way. Any two families of the same size with the same wage, if they work at the same trade in the same locality, will usually live pretty much the same lives. They will dress similarly, spend roughly equal amounts on rent and holidays, visit the same entertainments, despise the same things and reject the same food. It may be true that there are as many personalities as persons; but it is equally true that, despite the numbers of persons in a class, the class personality, so to speak,—the idea of the tribe—will tend to be one. When the class idea affects dress, we call it “fashion”; when manners, we call it “form”; when everyday-conduct, “respectability”. Its voice is called “public opinion”. In politics it makes parties. In all classes the class idea works and rubs down personal angularities. Its despotism is beneficent in so far as it insures a minimum of decency, culture, and sociability, but maleficent if it suppresses all individuality and retards change for the better.

The remarks in this section, taken in conjunction with the propositions laid down at the end of Chapter I, should enable us to decide on formal grounds in what sense it is true to say that each country must work out for itself its own political economy.

The abstract method.—Economics is occasionally to-day—but less frequently than it was a quarter of a century ago—condemned as abstract. But to say that a study is a science is to say that it is abstract. Even the so-called classification

sciences are abstract. To classify is to generalize and to generalize is to let slip certain facts. But to discard certain facts, if we discard appropriately, is to discover certain truths. The biologist, *qua* biologist, is blind to all the engaging ways of dogs, which make them companions, and regards each of them merely as a particular species of dog, and as a certain link in the evolutionary chain exhibiting certain peculiarities, all of which peculiarities are general ideas and not facts. Even myself, the biologist takes as something quite other than that which really makes me myself. History, too, in so far as it is selective or philosophizes, is abstract. It is clear, then, that to object to economics because it is abstract is to complain that its method is scientific. The vital question to settle is whether the abstractions of political economy are appropriate. *Solvitur ambulando*—achievements will justify—if it explains satisfactorily, its abstractions cannot be altogether faulty. It is, however, necessary to investigate its past and present abstractions.

Man is a bundle of motives and therefore highly complex. For the purposes of science, the conception of this complex had to be simplified. Consequently, certain leading motives used to be disengaged from the rest and personified to form the unit of the science, which was then known as the "economic man". He was not a lovable creation and he won not a little well-merited, and much undeserved, unpopularity. His vices are nowhere more thoroughly, though melodramatically, exposed than in Dickens's "Hard Times". But when he was criticized from the scientific point of view, it was sometimes overlooked that the motives isolated happened to be the dominant ones in business relations, with which much of political economy deals. It was frequently overlooked, too, that in many departments of the science this abstract method, despite its defects, led to remarkably correct forecasts. And it was commonly imagined, without sufficient reason, that a

sermon was being preached to the end that people should stifle all motives other than the ones separated for examination. At the same time, nevertheless, criticism was effective in warning economists to be cautious about their practical deductions. The popularizers of political economy, who certainly needed checking, had proved by their appalling practical deductions how dangerous the early abstract method could be in inexperienced hands, and how liable people were to think that the real world was the abstract universe of the economists, who on their part did not by any means keep entirely clear of the same unfortunate mistakes.

Ultimately, there were strong reactions in procedure: the historical school distrusted and denounced the abstract method; other writers maintained that social studies should follow more closely the lines of biological studies, which had at the time been stimulated enormously by the doctrine of evolution; and some demanded a science of men as they ought to be in their business relations. The trend of the period—and not only in social science—was to bring together again things which had been driven apart for a time by scientific requirements.

But the thinking of things together is barren without the thinking of them apart. It was, therefore, inevitable that a section of political economy should again secede from an environment less amenable than itself to exact formulation. It was not necessary, however, that Political Economy should simply revert to the old *a priori* lines, and it did not. It discovered a new way and along this new way it is advancing—but not to the desertion of other ways—with a caution unpractised before the last quarter of the nineteenth century. The new method consists, not in abstracting a motive, but in abstracting normal or average men and women in normal relationships, and abstracting from the activities of such typical people those which have reference to making a living. The

normal man is the product of the family in which he was brought up, and he may have a family of his own, by which he is again affected. He is taken as possessed of a character which has been moulded by family influences, family responsibilities, and all the features of his social life. The economist who admits competition, even if he provisionally supposes it to rule unchecked, need not disregard the family and the potency of crystallized public opinion, and make his science unnaturally individualistic. He may admit, and ought to admit, competition only in the degree in which it works within the complex of social impulses—compare, for instance, what has been said above about standards of life. A society is not atomistic but an organism hierarchically constituted of smaller group organisms of which families are the chief. We shall see later how important is the function of the family in the preparation and disposal of the labour of the rising generation and in other ways. The new analytical procedure is methodologically superior to the old. From the old, only rough approximations could be derived in most departments of economics; but it achieved notable results, and for some purposes it is still and will always be resorted to.

It may be repeated, in order that no mistake may arise, that modern analytical economics neither assumes nor advises selfishness. But without relegating sentiment to Saturn, we may hold that the affections do not directly enter into most business transactions. "Oh 'tis love, 'tis love, that makes the world go round," asseverated the duchess in "Alice in Wonderland". "Somebody whispered," said Alice, "that it's done by everybody minding his own business." However, among the impulses which are the motive power of business activities, the affections may play a large part indirectly. A man may work his best to make as much as possible in the interests of his family or friends, or even for philanthropic purposes. And it must not be imagined

that, in the absence of altruistic motives, a man who works his hardest for success must be sordid. The passion of great business leaders is commonly quite other than that of the miser. Because the counters which measure commercial gains consist of money, we are apt to go astray in our analysis. Those who play cards for cowries are not mastered by a passion for cowries. Until we understand the motives now at work in the economic field, we are not likely to make the best practical use of economic knowledge.

Historic and realistic methods.—The bare deductive method, which argues from general principles to particular cases, is so dangerous in certain branches of economics that it is incumbent upon the economist to return constantly to reality to test his theory. He will find it profitable, also, to watch patiently the heaving sea of facts as a whole and the interplay of its details. When facts are kept continuously under observation, it is not unlikely that the receptive mind will take the impress of their uniformities. As directly impressed, a uniformity must be vague, it is true, but by abstraction, inference, and special inquiry guided by hypotheses, it can be made definite. As first impressed, it must be a puzzle, because induction, that is generalization from a number of particular cases, may establish that a law is, but not why it is. To find out why it is, we must again fall back on abstraction, selective scrutiny, and deduction.

History, too, the imaged sweep of events in the past, by presenting us with data somewhat different from those of the present and differently collocated, and by taking sequences out of time so that they may be perceived at once without our waiting for time to make them, is of incalculable value even to the economist who merely wants to explain social facts as they are in his day. And it goes without saying that, severed from historical studies, the evolutionary science of political economy would be an impossibility.

Much of the data of economics is measurable.—We may now try to account for the relatively high state of development of positive non-evolutionary economic science in comparison with other social sciences. The chief explanation is that the former is concerned largely with facts that can be and are measured. Thus, we can and do express in money the intensity of our wants for different purchasable things, and the degrees of inducement necessary to make us engage in different kinds of work. Most communities possess some kind of money, and money measures the influences which interact in the making and sharing of income. Money, as a measure of value, despite imperfections which will be noted in due course, does in general for economics what standards of space and weight do for physics. As soon as the facts of a body of knowledge become capable of some kind of measurement, that body of knowledge advances to a higher rank among systematized studies, because its facts may be represented as quantitatively interrelated. However, many economic *data* which are measurable do not lend themselves readily to exact, or even approximate, measurement. It is not generally feasible, therefore, to calculate the quantity of the effect which will follow the causes actually operating at any moment. It will be as well to repeat here that the measurable facts with which the economist deals when he argues deductively are those found among typical persons.

Divisions of political economy and relations between them.—There is no agreement among authorities as to the best way of dividing up political economy regarded as a positive non-evolutionary science, but I prefer the division into the economics of (1) consumption, or demand, (2) production or supply, (3) exchange, or the equilibrium of demand and supply, and (4) distribution, or the sharing of wealth. The sources of wealth, and the actions of the members of a community working together to produce it, together with the

effects of their actions, constitute the data of the *economics of production*. The study of the initial impulses under which production begins is a part of the *economics of consumption*, while the effects of consuming things, in different degrees and proportions, is another part. The *economics of exchange* deals with the exchanging of things, and explains rates of exchange—why, for instance, some things, in the pile of wealth produced, have more value in exchange than other things. “*Distribution*,” when used to indicate a department of economics, is applied in a special technical sense, not to mean transportation or the delivering of goods to consumers, but to refer simply to the sharing of the product. It denotes that section of political economy which explains why wages, profits, rent, and so forth, are of the amounts that they are.

This brief account of the chief divisions of political economy will convey a rough idea of their contents; but in order to bring our imagery into closer relation with facts, we must suppose that all the economic processes described above go on at once and continuously. Wealth is distributed, for instance, as it is produced; the product, which is sometimes called the “national dividend,” is always a flow and never a fund. Moreover, as the reader works his way into this treatise he will realize that it is impossible to tear each section of political economy quite apart from other sections.

BOOK II.

CONSUMPTION, OR DEMAND AND ITS SATISFACTION.

CHAPTER III.

WANTS AND DEMAND.

Scope of the economics of consumption.—The economics of consumption comprehends, as we have already learnt, human wants and their direct satisfaction. It includes inquiries into the following subjects:—

- I. Wants in their relation to the means of satisfying them and to each other.
- II. The expenditure of income.
- III. The reactions of the satisfying of wants on production.

In satisfying our wants we are said to consume wealth, when wealth is needed for their satisfaction. I say “when wealth is needed for their satisfaction” because wealth, as ordinarily conceived, is not always needed for the satisfaction of a want. We sometimes want to do things—to sing, or go for a walk, or sleep—and just doing a thing is not ordinarily regarded as consuming wealth, though the possession of some wealth may frequently be required to do it. A precise meaning will have to be assigned to the vague term “wealth,” but its definition must be deferred until we have studied wants,

because wealth is the correlative of certain wants and without wants there would be no wealth.

The reactions of consuming on efficiency belong equally to the economics of consumption and the economics of production. In this treatise we shall only notice these reactions cursorily. The study of wants and demand is assigned to the economics of consumption for the simple reason that they initiate consuming.

Wants, utility, satisfaction, and demand.—"Want," which sometimes passes current as synonymous with "desire," is an ambiguous term which may refer (1) to a craving or longing, or (2) to a decision to make sacrifices, if need be, to possess some particular thing, or perform some particular action. There is no contradiction in saying that a man with a passion for alcohol, who is a total abstainer, wants an alcoholic beverage when he wants a glass of water. What is meant is that he has a longing for beer though he is trying to get not beer but water. It is with want in the second sense that the economist *qua* economist is directly concerned, and the relations between wants of this kind we may call "preferences".

The definitions of "*utility*" and "*satisfaction*" could not be so easily settled if we entered into the numerous controversial issues that have been raised, but it is probably best for the economist to avoid these issues, if possible, as they are really psychological and not, therefore, his concern. And it happens that their avoidance is not difficult as the directly presented facts, about which there is no dispute, are sufficient for his requirements. ✓ We may say that things have utility, or yield utility, in the degrees in which they are wanted or preferred, and that satisfactions result from their use in the degrees in which they have utility or are preferred. It is the preferences expressed in wants about which there is no dispute. When we speak of the utility of a thing we need not intend

more than the degree of preferability to us of that thing; and similarly, when we speak of the satisfaction got from using that thing we need not mean more than the degree in which our enjoyment of it was preferred by us. We need not intend more than this as economists, and we shall not throughout this work. Consequently, "utility" and "satisfaction" are to be taken merely as conventional representations of degrees of preference; and preferences are to mean for us the relations between wants understood not as desires but as actual or hypothetical choices (understood, that is to say, in the second sense given to "wants" above).

An illustration will aid the reader's comprehension of what exactly our reading of utility and satisfaction comes to. Bentham suggested that in courts of justice witnesses should be invited to state degrees of belief by reference to an objective standard, say to a yard measure. If this suggestion were carried out, and a witness indicated his belief that he met a certain person on a certain day by two feet and his belief that he met him some other day by six inches, he would not mean necessarily that corresponding to these beliefs there were within him two subjective states of two feet and six inches in length respectively, or even two such states the one of which was four times greater than the other. He would simply mean, were he a plain man concerned to give evidence and not to provoke a discussion on psychology, that his degrees of belief were related to one another in the ratio of four to one, and to certainty as twenty-four and six are respectively related to thirty-six. The twenty-four inches and six inches would be to him just *conventional objective representations of degrees of belief, and nothing more.*

So, if I should say that a man gets ten units of satisfaction or utility from his newspaper at breakfast, and two units of satisfaction or utility from his coffee, I should simply mean that he prefers the newspaper to the coffee in the ratio of ten

to two. The ten and the two units of satisfaction or utility, so understood, would be just *conventional objective representations of degrees of preference or choice and nothing more*.

It remains to give to "demand" a clear-cut meaning, and here again we find some disagreements in wording if not in substance. Demand is frequently said to be the expression of a want on the part of a person who is in a position to offer something to get what he wants. This view of demand is not wholly satisfactory, as everybody who is not quite destitute is in a position to offer something even for the Koh-i-noor diamond. If we try to evade this objection by saying that demanding consists in making a *reasonable* offer for what we want, we are no better off, since we are then logically compelled to define what constitutes in each case a reasonable offer. Sometimes demand is simply regarded as the tangible expression of preferences in terms of exchange, and so it will be regarded in these pages. *✓Demands, we may say, are the quantitative expressions of preferences.*

The psychological basis of demand.—Some economic writers have assumed that any apparent conflict between the two sorts of wanting described above is illusory. Let us provisionally call want in the second sense, in its reference to economic conditions, "*demand*," and want in the first sense "*longing*". Let us also call the psychological state connected with longing, through which action is produced, "*impulse*". It is supposed by these writers that demands measure longings or impulses : that, when we seem to act against our impulses, the explanation is that deliberating has brought out other and stronger impulses which, by virtue of their greater strength, triumph over the earlier impulses. Now I should contend that these writers are treating as settled a psychological question (i.e. a question belonging to the science of the mind) which is still controversial, or might at least become so, and a question upon which psychologists alone are capable of expressing an opinion. The economist's intrusion into psychology is both venturesome and unnecessary. If choice does not always fall on the course to which the strongest

impulse points, the economist is wrong when he represents demand as measuring impulses. And if choice does always fall on the course to which the strongest impulse points, to say that demand measures impulses has no more significance for economic purposes than to say that demand measures preferences. Of course, if it can be maintained psychologically that preference alone indicates the strongest impulse, preference and not impulse is the bedrock of fact upon which our economics must be founded. Choices and the relations between them, or preferences, are the only ultimate facts about which we as economists can feel quite sure. And they are sufficient. To go behind them is not our business as economists but the business of psychologists.

It may be added that those writers who state that demand, as above interpreted, measures motives or inducements to action, are making either the assertion which has just been criticized, or the assertion which will be examined next, if they do not mean merely that demand measures preferences.

There are certain economists who maintain that utility or satisfaction is a measurable thing apart from the fact of choice, and derive their explanation of demand from the consequences in the form of utility or satisfaction to which consumption leads. They may accept the view that impulse is the direct cause of action, but, if so, they believe that the impulse measures the expectation of utility. Choice, they assume, must fall on the action which is followed by the greatest utility or satisfaction, so far as anticipation is not mistaken. They therefore suppose that demand measures utility or satisfaction. Seeming instances to the contrary, they imagine to be explained by the new expectations of utility and disutility aroused after reflection.

Against taking this doctrine that demand measures satisfaction as one of the principles of economics, I should bring objections identical with those already advanced against taking the doctrine that demand measures cravings or impulses as a fundamental economic thesis. It is at least likely that we do not choose things in the order of the degrees in which we expect to derive satisfaction from them, if satisfaction is measurable apart from the facts of choice. And if satisfaction is not measurable apart from the facts of choice, and we only know that one of two things has the greater

pp. 21-3). This compromise is not reached at once, but is approached step by step; and even if we thought only of pleasing ourselves, it would not be possible to spend an income straight away to the best purpose, seeing that our first guesses at the relative amounts of utility obtainable in different ways are almost bound to be falsified.

Systems of demand crystallize into habits; hence it becomes difficult for us to alter them fundamentally. It is advantageous that habit should be allowed to settle the small recurrent problems of life for us, because habit economizes time and effort. The housekeeper would never have a moment for anything else if she had to think out her weekly expenditure *ab initio* every week. But we all run the risk of getting so thickly encrusted with habits that we are rendered incapable of developing. The supreme importance of fostering adaptability, of keeping our habits open, so to speak, as well as our minds, while our habits are left at the same time with enough strength to relieve us of the worry of thinking out anew each small outlay, on the recurrence of our needs, is abundantly manifest.

Owing to the fact that our systems of demand are only slowly built up, it will frequently be found that a sudden rise of our incomes is accompanied either by a degree of saving which is afterwards curtailed, or for a time by ill-judged extravagance. And, inasmuch as the deprivation of something included in our systems of demand means, not only the loss of the satisfaction derived from consuming it, but also the added discomfort of breaking a habit, it will frequently be found that a reduction of income is accompanied by a running into debt or by the exertion of special efforts to restore the old income. We may gauge the force of habit from the effect upon price of a permanent shrinkage in the supply of something of which the consumption has become habitual. Suppose the wheat supply were permanently cut down. Im-

mediately there would follow an immense elevation of price, because most people would not know how to dispense with any of the wheaten bread to which they had grown accustomed. Ultimately the very high price would subside somewhat, because rye-bread and other forms of food would gradually be substituted for wheaten bread in systems of demand and standards of living.

Though the demands of any and every individual must, strictly speaking, be conceived as a whole, some of the constituent demands of a group demand are so little dependent upon other demands that they may be conceived as practically independent. Between the others—the closely dependent demands—a number of different relations hold. The chief of these are complementary and substitutional relations.

The demands for two or more things may be *complementary*, and, when so united as complementaries, things are said to be in *joint demand*. We have an example in the demand for knives, which is a joint demand for knife-blades and knife-handles. Two or more things may be demanded jointly in a fixed ratio or fixed ratios, or in a variable ratio or variable ratios. Again, one or more of the constituents of the joint demand may also be demanded independently, or in a different joint relation. Golf-clubs and golf-balls are jointly demanded in a variable ratio. When golf-balls rise in price, golfers demand fewer, because they take greater care of them, search longer for lost balls, and are less fastidious; but the demand for golf-clubs is not much affected. The ratio is more rigidly fixed in the case of table-knives and forks. Milk is demanded in more than one joint relation—for instance with tea and with arrowroot—and also separately as a beverage.

Two or more things may be *substitutes* and may, therefore, be demanded to the partial or almost complete exclusion of each other for the time being. Examples are found in beef and mutton, and tea and coffee.

CHAPTER IV.

DIMINISHING UTILITY AND MARGINAL USE.

Total and marginal utility.—The central topic of this chapter is to be the law of diminishing utility, but it is necessary to begin with the conception of marginal utility and the distinction between this and total utility, as they have to be used in the enunciation of the law in question. The *total utility* of a given quantity of any commodity means the whole of the utility or satisfaction obtained by the person consuming it, whereas the *marginal utility* means the addition made to the total utility by the addition of the last increment consumed. Or, put in terms of preferences, total utility means the degree in which a given quantity of an article is preferred to something else which is taken as a standard for the measurement of wants, while marginal utility means the degree in which the preference was raised by the addition of the last increment. It is easier to speak in terms of utility (or satisfaction) than in terms of preferences, though it is preferences that are intended; and we shall take the easier course. But it must be remembered that when, in any illustration, we refer to a definite amount of utility, as for instance twelve units of utility, we are having recourse to what is probably a fiction—for it is doubtful whether a unit of utility is a real thing like an inch or an ounce—to enable us to express on paper without circumlocution the undoubted fact that preferences are quantitatively related (see pp. 21-3). The distinction between total utility, in the sense that should

now be fully understood, and marginal utility is by no means difficult to grasp, but it is so fundamental to a great deal of economics that it will be prudent to run the risk of saying too much about it, rather than too little, and illustrate it by means of a concrete example. Let the table beneath relate to the utility of sugar to some particular person :—

Pounds of Sugar Consumed per Month.	Total Utility Derived from Consumption.	Marginal Utility.
1	100	100
2	180	80
3	230	50
4	270	40
5	290	20

Each figure in the third column is obtained by deducting from the figure in the second column, in the same line, the previous figure in the second column. Thus the 20 is obtained by deducting 270 from 290. And this is the interpretation of the table: if 2 lb. of sugar are consumed monthly the total utility to the supposed consumer is 180 while the marginal utility is 80, but if 3 lb. are consumed the total utility is 230 and the marginal utility is 50, and so on. In this table the increments of the article have been taken too large for the best possible representation of marginal utility, as this is always understood to relate to a very small increment relatively, but the table serves for illustration. The increments were made large to keep down the size of the table, while bringing quantities up to a not unreasonable consumption of sugar and yet showing initial utilities.

Now there are two additional points of importance to note. The first is that the marginal utility of a commodity is not the same as the utility yielded (or satisfaction enjoyed) during the consumption of the last increment. Thus, if 5 lb. of sugar

are consumed by our supposititious person, it must not be assumed that he gets 20 units of utility while consuming the fifth pound. The addition of the fifth pound might have affected his enjoyment of other pounds, so that his fifth pound yielded more or less than 20 units of utility. The 20 units of utility make up the marginal utility, which means the addition made to the total utility got from his monthly consumption of sugar; and this, for the reason given, is not necessarily the same as the utility yielded during the consumption of the fifth pound. Indeed, to be quite precise, we ought to say that the marginal utility of, say, the fifth pound of sugar means the addition made to the total utility obtained by the person in question when his monthly consumption of sugar is raised from 4 lb. to 5 lb. and his means remain otherwise as before. The second additional point to notice is that it is not always possible, even in theory, to assign definite amounts of utility to the initial increments of a commodity, because these initial utilities may be vast and indefinite, as for instance in the case of water.

The law of diminishing utility and its limitations.—Of all the laws of demand far the most important is the *law of diminishing utility or of satiable wants*. It declares broadly that the more we have of a thing the less we want additional increments of it, or the more we want not to have additional increments of it. We become gradually indifferent to chocolate, for example, as we consume it less abstemiously, and then inimical to it. Put in terms of utility, the law proclaims generally that, as the amount of a thing consumed within a given time increases, the utility derived from it *increases at a diminishing rate* (so long as utility increases at all), or, in other words, its *marginal utility decreases*. This decrease goes on as a rule, if consumption continues, until marginal utility drops to zero; and if, after zero utility is reached, our supplies of a thing are still unexhausted and we

are forced to consume them, we begin to experience dissatisfaction in place of satisfaction. That this dissatisfaction or disutility (which is the negative of satisfaction or utility, as pain is the negative of pleasure) will increase at an increasing rate as our supplies increase, needs no proof.

The law of diminishing utility, though it holds equally of immediate effects, should ordinarily be taken to relate to effects in the long run, that is to say, to effects after time has been given to the consumer to adapt himself and modify, if need be, his consumption of other things; for it is with the latter reference that it is of most significance socially. Bearing this in mind, we may proceed to review certain limitations and apparent limitations of the law of diminishing utility.

The first limitation to notice is trifling: it is that in the long run the marginal utility of certain commodities may begin by rising though it falls ultimately. We must have a moderate amount of some commodities before we can appreciate them. Indeed, if we took the increments of a commodity small enough, marginal utility would generally mount at first. An ounce of coal, for instance, is no good to anybody; coal would not yield any value to speak of till very many ounces were available.

Another limitation, sometimes called an exception, is due to the fact that some commodities really change in character, or in their appeal to certain consumers, as the quantity of them possessed by those consumers increases. Hence their marginal utilities may steadily rise: for instance, to a collector of eggs, the value of great auk's eggs, of which there are very few, might ascend with his success in getting great auk's eggs because they would add at a growing rate to the uniqueness of his collection; to have two great auk's eggs is to be envied; but to have six is to be a prince among egg collectors. Of the same order are the cases in which the

utilities of certain things to certain consumers are sensibly governed, not only by the quantities they possess, but also by the quantities possessed by other people, and even by the classes of people who are possessed of the things in question. The value of a telephone to any one user is enhanced when more people get linked on to the service with which it is connected. The value of rare things to a collector appreciates when some of the supply not held by him is destroyed. The value of a thing of fashion may expand as some classes acquire it and contract as other classes acquire it. In order to bring these instances under the law of diminishing utility, we have to limit the law by assuming that the quantity, or distribution, of the supply of the commodity which is not in the hands of the person whose demand we are studying remains constant.

We must also remind ourselves (pp. 25, 27) that the value of a thing is almost sure to depend in some degree, though it may be in a very slight degree, upon the abundance of other things which its owner possesses. If a man's income suddenly doubled, the level of the utility yielded him by certain quantities of certain things would be raised, the reason being that his greater wealth in other things brought out the value of these particular things. The utility of furniture is a case in point; the value of a fourth bedstead to anybody who lived in a cottage might be paltry, but it would become high if he inherited a fortune and a mansion. And the utility of certain other things would be lowered by the increase of income: the value of a bicycle to a man who bicycles because he cannot afford a motor-car may drop to zero when he gets a motor-car.

Further, the marginal utility of a person's income as a whole might actually rise as his income rose. His whole scheme of consumption could then be reconstructed; and in more affluent circumstances he might become a different individual. He might have been debarred by the meagreness

of his income from embarking upon a career which attracted him. If fortune brought him just sufficient wealth to enable him to follow his bent, his life might be so altered, that the marginal utility of his income in his good fortune could easily exceed what the marginal utility of his income had been previously.

These numerous qualifications make it plain that the law of diminishing utility as broadly stated at the beginning of this section is lacking in definiteness of pronouncement. For this reason it will be a convenience to recognize not one law but two, namely *the law of the diminishing utility of things* and *the law of the diminishing utility of income*, as they might be called. The first holds with few, if any, real exceptions, of the later increments of consumption at least, in the case of all people, *so long as their incomes remain about the same*. For, the wants which are still felt to press but have to be left unsatisfied are naturally less intense than those picked out to be satisfied, seeing that everybody tries to do the best with his income. But, irrespective of income, this law has a far more limited application, for reasons stated above. The second law holds of almost all incomes when they are incrementally increased. But when an income is largely increased, the law may not apply to the change, as an entirely new plan of expenditure may be adopted, and the new scheme of existence rendered possible may have a high yield in utility.

Diagrammatic representation of diminishing utility.—Consider fig. 1, ignoring at first the dotted lines. Let *ab, bc, cd, . . .*, stand for successive increments of a commodity, say ounces of tea consumed by some person per week. We may represent the satisfaction drawn from 1 oz. by the rectangle on *ab*, and the satisfaction got from 2 oz. by the rectangles on *ab* and *bc*, and so forth. The rectangles on *bc, cd, . . .*, therefore, represent the additions made to the satisfaction derived from his consumption by raising the consumption of

tea from 1 oz. to 2 oz., from 2 oz. to 3 oz., and so forth respectively. The law of diminishing utility asserts that the rectangles will get less and less in height successively as we pass from left to right. As we increase our consumption of tea, the total utility enjoyed by us increases, at any rate up to a point; but it increases at a diminishing rate. The diminishing rate in our imaginary case is shown by the decrease in size of the rectangles in fig. 1. We must not say that the satisfaction got from the second ounce of tea is the rectangle on *bc*, and the satisfaction got from the third ounce the rectangle on *cd*, and so forth. When consumption is raised from 1 oz. to 2 oz., all that the facts warrant us in saying is that the total satisfaction derived by the person in question from tea is

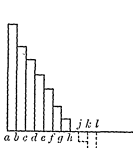


FIG. 1.

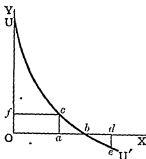


FIG. 2.

increased by the rectangle on *bc*. The rectangle on *bc* stands for the difference made to his total satisfaction by the second ounce of tea. Similar statements, of course, may be made of all the other rectangles in the figure. If 3 oz. (*ad*) of tea are consumed weekly, the total utility is the sum of the rectangles on *ab*, *bc*, and *cd*, while the marginal utility is the rectangle on *cd*. If 4 oz. (*ae*) of tea are consumed, total utility is the sum of the rectangles on *ab*, *bc*, *cd*, and *de*, while marginal utility is the rectangle on *de*.

When consumption reaches *aj* in our imaginary case, the utility of the last increment, *hj*, is zero. When consumption is *ak*, we find marginal dissatisfaction (or negative satisfaction) instead of marginal satisfaction. The marginal dissatisfaction is the rectangle below *jk*. And the rectangle below *kl* is greater than that below

jk. Dissatisfaction is indicated by rectangles below the vertical line *al*. If *al* of the commodity is consumed, the net utility derived is equal to the rectangles above *al*, less the rectangles (marked with dotted lines) below *al*. Only we must notice that people do not consume things till their marginal utilities become negative, except by mistake.

The reader's attention may now be drawn to a method of representing the variation of the utility derived from a commodity with the quantity of it consumed which is more convenient than that followed in constructing fig. 1. If as the basis of fig. 1 we took tenths of ounces instead of ounces, each of the divisions along *al* would be divided into ten parts and the rectangles standing on these sub-sections would be very narrow. Consequently the difference between the aggregate area of the rectangles and the area enclosed between the line *ah*, the left boundary of the first rectangle, and a line through *h* joining the top left-hand corners of the rectangles, would be very small. And this difference could be made as small as we pleased by taking the units along *aj* as small as we pleased. Hence fig. 1 may be reduced to fig. 2. We may call *UU'* in fig. 2 a "utility curve". When *Oa* of the commodity to which the curve relates is consumed, the total utility obtained from it is *OacU* and the marginal utility is a rectangle whose height is *ac*. If the supply were reckoned in very small increments this rectangle would be very thin. For short, we may simply say that the marginal utility is *ac*. If *Ob* is consumed, total utility is *ObU* and marginal utility is zero. If *Od* is consumed, total utility is *ObU - bed* and the marginal disutility is *de*.

The lines meeting at right angles at *O* are called *axes of coordinates*. The various vertical distances between a curve and *OX* are called its *ordinates*, and the horizontal distances between it and *OY* its *abscissae*.

It is not always possible, theoretically even, to start the curve *UU'* at a point on *OY*, because the utility of initial increments of a commodity might be indefinite.

Are all wants satiable?—From the fact that the marginal utility of a commodity may subside to zero, and even sink to a negative quantity, it does not follow that human wants in their

entirety are within measurable distance of being satiated or are indeed satiable. Man may be conceived as a bundle of wants that are of two different sorts. On the one hand, he wants things that cannot be directly bought, such as health, culture, a model society. These wants, we may affirm, can never be completely appeased. On the other hand, he wants things that can be directly bought, these wants being largely derived from the wants for things that cannot be directly bought. A man may demand dumb-bells because he aspires to be muscular. He may never, perhaps, become as muscular as he would like to be, but he will soon have as many dumb-bells as he has any use for if he goes on buying more and more of them.

Wants of the second class may all be regarded as theoretically satiable, from a common-sense point of view. Anybody with an income of £10,000,000 could buy all the purchasable things that he had time to covet. But, for practical purposes, the aggregate wants of the second class, in the case of almost all people, may be regarded as insatiable, because very few people are enormously wealthy. Of almost all people it is true that they could spend without difficulty very much larger incomes, and would enjoy having very much larger incomes to spend.

One reason why wants in general are practically insatiable is that new particular wants appear as the old are met. It has been asserted that the satisfaction of old wants actually creates new wants, and there is some ground for the assertion. When a student's demand for an elementary book on political economy is satisfied, in the sense that he has procured it and read it, a want for more advanced books on political economy is generated which could not have been generated before. But the fact that new demands become clamorous, after the old demands have been met, does not always mean that new wants have been created by the

satisfaction of the old. Sometimes the wishes underlying the new demands were there all the time, but were quiescent because we were actively engaged in getting our more urgent cravings assuaged. Wants—except the wants for necessities—do not ordinarily disturb us much, when there is little chance of their becoming effective demands, because we do not pay much attention to them. They are mere idle wishes which leave us untroubled, like day-dreams.

The utility of complements and substitutes.—Supposing that no goods are so indispensable that the utilities of their initial increments are indeterminate, then, if we could add up the satisfactions attributed separately to the consumption of each of a group of goods included in a scheme of consumption, we should not produce a sum which is the same as the amount of utility actually enjoyed. We should produce such a sum were all the things independent in value; but they are not, as we have already perceived. Many articles are bound together by complementary and substitutionary relationships.

Let us inquire what happens when we add together the value attributed to tea, and the value attributed to coffee, since tea and coffee are partial substitutes. The utility of tea is calculated on the supposition that a person has such a substitute as coffee; it is less than it would be if he had no coffee. Again, utility is attributed to coffee on the assumption that there is tea to fall back upon. If, therefore, we add together the satisfactions derived from tea and coffee separately, we get too small a total, for we leave out what would be lost by the entire withdrawal of the group of stimulating beverages made up of tea and coffee.

Correspondingly, adding the utilities attributed to complements involves adding some utilities twice over. An extreme example is afforded by boots. If I have a boot for the right foot only, its value is insignificant; but the value of a pair of

boots is high, so with a right-foot boot only in my possession I should set a high value on a corresponding left-foot boot. Now, if I calculated the utility of a right-foot boot in the same way by estimating what I should lose if it disappeared and I were left with only the left-foot boot, and then added this utility to the utility likewise attributed to the left-foot boot, I should get a total utility greater than that actually yielded by a pair of boots. Less extreme, but similar in kind, are the illustrations which might be drawn from complements the members of which have more independent value, like bread and butter, tea and cream.

The basis of laws of utility.—The law of diminishing utility or satiable wants, with its dual reference to individual things and income, the limitations of the law, and the other generalizations laid down above as regards utility, may all be established by the direct introspective inquiry of a number of different persons, supplemented by observation of people's actions. The law of diminishing utility, so far as it holds, may in addition be confirmed by pointing out that utility varies directly as the urgency of demand, and that the most urgent demands will usually be attended to first.

Marginal quality.—"Marginal" is unfortunately an ambiguous term which has a meaning other than, though related to, that set forth above. With this other meaning, "marginal" must be recognized as having an established place in the nomenclature of economic science. It has reference to the quality of things (including persons and services). When a thing is of such a quality that it is only just worth while using it, in view of all the circumstances, it is sometimes said to be marginal or to have marginal quality.

Suppose, for instance, I go into an orchard to pick up a dozen fallen apples for a pudding. *The marginal use of apples* to me in the circumstances would be the difference made to the utility of the pudding by putting twelve apples into it

instead of eleven, if the apples were all equal in size and quality. If, however, they are not, the apple which is the least satisfactory of the twelve chosen is the *marginal apple*, meaning the apple of marginal quality.

Take another illustration. If an employer engages 100 men for a particular purpose, the difference between the value to him of 99 men and the value to him of 100 men, who are identical in respect of efficiency, is the marginal value to him of labour of the kind in question, or the value to him of labour at the margin. This we have already learnt. Now the *marginal man*, meaning the man of marginal quality, in this case is the man who is only just efficient enough to be employed for the purpose in question when 100 are going to be employed. Evidently the 100 are not likely to be endowed with exactly the same efficiency.

Similarly we may say that the land which it is only just worth while to use, in view of its position or fertility, is the *marginal land*.

Similarly we may say, to put it roughly, that in any given industry the business or firm which is only just efficient enough to continue producing, in the long run, is the *marginal business* or *marginal firm* in that industry (see pp. 161-3).

This conception of the *marginal thing*, and the distinction between it and the conception of the *marginal use of a class of things*, must be firmly grasped before the student advances a step further.

CHAPTER V.

DEMAND PRICES, EXPENDITURE, AND CONSUMERS' SURPLUS.

The law of demand price.—Demand is expressed in offers of things of value for things of value. Under modern conditions offers are ordinarily made in terms of money. Let us then speak of demand in future as an offer of money. Now observe that *demand, say for coal, means neither a price, nor a quantity of coal, but the prices which will be paid for different quantities of coal.* Demand, then, states the relations between the quantities that might be purchased and prices.

Because of the law of diminishing utility, people will almost always offer less and less per unit for additional supplies of a commodity for consumption in a given period of time; that is to say, assuming that the article is butter, price would need to be lower if 3 lb. were to be bought than if 2 lb. were to be bought by any person in the month.

To be rigidly exact, we should call a person's demand price for a given quantity of a thing, as above described, "*marginal demand price,*" to distinguish it from what the person would give, if need be, were the alternative his being deprived of the thing altogether. This latter payment would obviously be governed by the aggregate, and not the marginal, utility of the given quantity of the thing in question.

By combining the demands of all individuals buying in one market, we get *market demand prices.* What is meant by

combining individual demands can be made evident by the following example :—

Price.	Amount that A would buy.	Amount that B would buy.	Compound demand, i.e. combined amounts that A and B would buy.
5s.	1	0	1
4s.	3	1	4
3s.	8	4	12
2s.	12	7	19

What is done here with two consumers could theoretically be done with twenty thousand. But it could only be done *theoretically*. It is of value to realize how market demand prices are compounded of individual demand prices, yet our knowledge of this will not enable us to draw up the market demand schedule at any time for any particular commodity. In general form, parts of a market demand schedule may be indicated nevertheless, after we have watched side by side variations in price and in amount sold. However, we must remember that the conditions of any society, including the relations between demands, are subject to ceaseless mutations ; and that, therefore, in sketching demand from nature we are delineating a thing that is changing as we draw it.

Because in almost all cases previous buyers will not purchase more, and new buyers will not appear, unless the price of a thing falls, in almost all cases market demand price will fall as the quantity of the thing offered increases. This inference is evidently valid if market demand may be regarded as compounded of individual demands ; and we know, moreover, from direct observation, that the market demand price for large quantities is less than that for small quantities. It must be pointed out, however, that the simple kind of composition of market demand assumed above provisionally, for the pur-

poses of exposition, is not actually to be found in numerous cases, while in some cases it is not even an approximation to the facts. This follows from what we have already learnt of the frequent dependence of an individual's demand for a thing upon the total quantity of the thing sold to other people. Consequently, taking the last line in the above table for illustration, the correct interpretation is that when the price is 2s., and 19 units are bought altogether, A will acquire 12 of them and B the remaining 7. The point is that B, say, who is prepared to pay 2s. each for 7 units when A has 12, would not necessarily be prepared to do so if A had 6 or 20. In either of these events, B's offer might be higher or lower than 2s. In other words, while market demand is in a sense derived from individual demands, the latter are also in a sense derived from the former. But, when this is conceded, and any person's demand for a given quantity of an article is expressed on the understanding that the total quantity sold at the price is what it is, the general statement made above that individual demand prices almost always fall with increased purchases remains true.

Elasticity of demand.—One of the most important attributes of demand is what is called its *elasticity*. The term "elasticity" is applied in a special technical sense to demand. We say that demand is highly elastic if demand price falls very little as consumption is increased; and that it is highly inelastic if demand price falls rapidly as consumption is increased. Dr. Marshall has suggested that we should call the elasticity of demand "unity," so long as the amount demanded at a price multiplied by the price (that is the aggregate sum paid for what is sold) remains constant. If it were more or less elastic than this, we should say its elasticity was greater or less than unity as the case might be. Naturally a demand has different elasticities with reference to different quantities. Beneath is an example of a

demand which has elasticity equal to unity at first, then elasticity greater than unity, and finally elasticity less than unity :—

Amount Demanded.	Price Offered.	Aggregate Paid (i.e. the Product of Figures in Columns 1 and 2).	
1	20s.	20s.	} Elasticity unity.
2	10s.	20s.	
3	6s. 8d.	20s.	
4	5s.	20s.	} Elasticity greater than unity.
5	4s. 1d.	20s. 5d.	
6	3s. 6d.	21s.	
7	3s. 4d.	23s. 4d.	} Elasticity less than unity.
8	2s. 10d.	22s. 8d.	
9	2s.	18s.	
10	1s. 6d.	15s.	

It will be realized as we proceed how important the conception of elasticity is.

Diagrammatic representation of demand.—We may represent the individual or market demand for some commodity or service, as in fig. 3, by a curve, which is usually lettered DD' and is called a demand curve. It sets forth the relations between price and quantity bought, or the amounts that will be bought at different prices in a given time. Price is measured upwards along OY and amounts bought are measured from left to right along OX. It is evident that the curve of market demand prices must descend, since all the curves of individual demand prices, of which it is compounded, descend. An example of composition of two demand curves will be found in fig. 15 on p. 216.

Of any two demand curves drawn to the same scale the steeper at any part is the less elastic. But we must be careful not to be deceived by appearances as to the elasticity of curves. A curve that looks steep might be highly elastic. The angle at which a curve descends at any point can be made anything we please by arranging the scales marked along OX and OY. Consider the curve in fig. 3. It is steeper at the left than at the right, but

it will be seen, on measuring up the rectangles enclosed between the curve and OX and OY, that it is more elastic at the left than at the right. At the extreme left these rectangles are increasing, but at the extreme right they are decreasing. The area of each rectangle represents price multiplied by quantity. The following sample calculation is made in order that there may be no misunderstanding:—

The first rectangle	=	100 × 12s.	=	1200s.
„ second „	=	200 × 7s.	=	1400s.
„ penultimate „	=	900 × 1s. 3d.	=	1125s.
„ last „	=	1000 × 1s.	=	1000s.

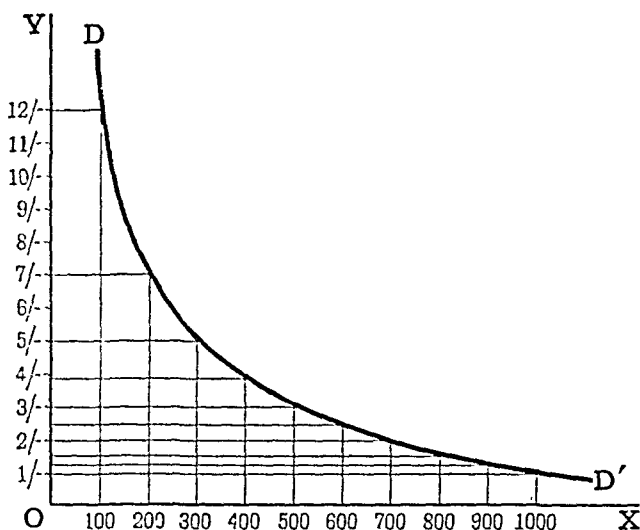


FIG. 3.

The law of substitution or indifference, or equi-marginal utility.—This law is one of the most fruitful in consequences of all economic laws. We shall remark later that it applies also to production and has an intimate bearing on distribution.

As regards expenditure at any one time (p. 49), the law of substitution, indifference, or equi-marginal utility, affirms that we all tend so to regulate our purchases that the marginal satisfactions per unit of outlay yielded by different things be-

come equal. It is reasonable to act in this way and most people are disposed to act reasonably. We all want to get as much satisfaction as possible out of our incomes. We get the most satisfaction out of them when we so spend our money that pennyworths of everything are yielding at the margin the same satisfaction. The proof of this proposition is simple. Suppose money spent per week on butter and sugar produces for me per week the utilities shown in the table beneath:—

Pence.	Aggregate Utility of Butter.	Marginal Utility of Butter.	Aggregate Utility of Sugar.	Marginal Utility of Sugar.
1	10	10	9	9
2	18	8	16	7
3	24	6	20	4
4	29	5	23	3
5	32	3	25	2
6	34	2	26	1

Let us read one line to be sure that we know what the table means. The third line says that threepennyworth of butter yields an aggregate satisfaction of 24 and a marginal satisfaction of 6, and threepennyworth of sugar yields an aggregate utility of 20 and a marginal utility of 4. Now consider the spending of a sum of 9d. a week on butter and sugar alone, and for the time being ignore other expenditure. Imagine that I spend 6d. of this on butter and the remaining 3d. on sugar. Then the marginal utility of butter to me is 2 and the marginal utility of sugar is 4. If I reduce my expenditure on butter by 1d., I lose 2 units of utility, but when I spend on sugar the penny so saved I gain 3 units of utility. So there is a net gain of 1 unit of utility. On glancing at the table, we can verify that this is the position of maximum advantage for the expenditure of 9d.

on butter and sugar. When 5d. buys butter and 4d. buys sugar, aggregate satisfaction is $32 + 23$, that is 55; when 6d. buys butter and 3d. buys sugar, aggregate satisfaction is $34 + 20 = 54$; when 4d. buys butter and 5d. buys sugar, aggregate satisfaction is $29 + 25 = 54$; and all other possible ways of distributing 9d. on the purchase of butter and sugar also yield less than 55 units of satisfaction. What is true in this case, where 9d. has to be spent on butter and sugar, must be true also when larger sums of money and many commodities are involved. Hence it is proved that income should be so spent that the marginal return of satisfaction to a unit of expenditure becomes the same for all the commodities. From this it follows that a thoughtful and careful person will aim at buying such quantities of different things that their prices measure their marginal utilities to him. That is to say, when a person pays 3d. a pound for sugar and 1s. a pound for butter, acting sensibly he will buy such quantities that the marginal utility of butter to him per pound becomes approximately four times the marginal utility of sugar to him per pound.

The law of equi-marginal utility, substitution, or indifference, is so-called because it alleges that every person will try to get equi-marginal returns from his expenditure; that he will seek to attain his end by substituting the more profitable for the less profitable expenditure whenever he sees an opportunity; and that, when he has brought about equi-marginal returns, a diminutive accession to his income will be spent indifferently upon one thing or another.

Observations on the law of substitution.—The law of equi-marginal returns, which is more commonly known as the law of substitution, is analogous to—even akin to—the law of natural selection by survival of the fittest in zoology. Things which are the fittest to satisfy us, in relation to their cost, survive in effective demand and are bought; and at the

very small amount of one's money income ; and this generally falls as income increases because of the law of diminishing utility.

It is noteworthy that it is simply the operation of the law of substitution which enables us to speak of the marginal utility of money. The marginal utility of money we have defined in effect as the access of utility got through the last penny of income, so to speak. But if the law of substitution, or equi-marginal returns, did not hold in consumption this access of utility might be anything. What it was would depend upon what the penny purchased. Spent on one thing, it would have a higher utility than when spent on another thing ; so the marginal utility of money would be meaningless. But, with the law of substitution at work, the penny brings the same access of utility however it is spent ; for, in this event, income is laid out in such proportions on different things that they yield per penny equi-marginal returns in utility. So, in this event, the marginal utility of money is something definite.

We are not of course compelled to distribute our incomes according to the law of substitution or equi-marginal expenditure, as a stone thrown into the air is compelled, in a sense, to fall back to the earth ; but as a matter of fact we do, in a certain rough fashion, because we are reasonable. So it is correct to call our tendency to do so a law. But we must be careful to bear in mind that, for a variety of reasons, people only tend to act according to the law of equi-marginal expenditure " in a certain rough fashion ". To measure preference, which fluctuates, is a delicate and perplexing task, and we may easily go astray. Again, we must recognize *minima sensibles* or the utilities of degrees of expenditure about which the consumer will not trouble. A bachelor with £1000 a year will consume tobacco till its marginal utility to him is zero, because the pennies which he would save weekly by getting its marginal utility

up to the general level of the marginal utility yielded him by more expensive things would not be worth the worry of deliberating. The utility of a few pence is to him below the minimum sensible. Much of the balancing of utilities which brings about equi-marginal returns, one must be particular to observe, moreover, is merely implicit: it only becomes explicit when relatively large outlays are involved. We do not ordinarily take any trouble about this balancing, but jump to conclusions without thinking about it.

The law of substitution, indifference, or equi-marginal returns, also helps to explain our actions when we decide how much to spend at one time and how much at another time. Very broadly speaking, we try so to arrange our saving and spending, *cæteris paribus*, that we reap equi-marginal returns continuously. But into the question of thrift numerous disturbing factors enter; so we must defer our consideration of this matter until we reach Chapter XXV.

Consumer's surplus of satisfaction.—The conception of consumer's surplus, or consumer's rent, has of late been made to play so prominent a rôle in advanced economic theory that something must be said of it even in an elementary treatise, though neither its value nor the difficulties involved can be fully appreciated by those who are only beginning the study of political economy. The conception has sometimes been designated indifferently that of "consumer's *rent*" or "consumer's *surplus*". But it is probably best to avoid the use of the term "rent" in this connexion, at any rate at present, because its use in this connexion necessitates defining "rent" in a way which might not be found convenient.

When I pay away money for anything, the marginal or final unit of expenditure is responsible only for my marginal satisfaction. The rest of the expenditure yields more than marginal satisfaction per unit of expenditure. The excess of satisfaction procured, over and above the product of the

marginal satisfaction and the amount of the thing purchased, may be called "*consumer's surplus of satisfaction*". It represents what I should have lost, other things being equal, had the thing not existed. I should have lost it because I should have spent on a number of other things the money now devoted to it, and should have gained from the money marginal satisfactions only, namely the increases of satisfaction got from slightly increasing my supplies of a number of other things. As regards the indeterminate utilities of indispensable supplies of things, and the relations between consumers' surpluses on substitutes and complements, the reader is referred to pages 53 and 37-8.

Diagrammatic representation of equi-marginal returns and consumer's surplus of satisfaction.—In fig. 4 measure units of money along OX and units of utility or satisfaction along OY. Let P, C, and M be curves (similar to the curve in fig. 2 on page 34) indicating the marginal utilities derived weekly from consuming such quantities of porridge, coffee and milk respectively as can be obtained by spending upon them the sums of money measured along OX. Then, according to the law of equi-marginal returns in consumption, if a sum of money Oa is spent weekly on porridge, Od will be spent on coffee and Oe on milk, because with these expenditures the marginal utilities derived from coffee and milk respectively are made equal to the marginal utility derived from porridge, that is to say $ag = dh = ej$. In this case the total utility derived from porridge would be represented by the area Oagk, that from coffee by Odhl and that from milk by Oejn. If the income were less, smaller sums would be spent on each article, but expenditure would still be so distributed that marginal returns were equal.

Next, we may illustrate with the aid of this figure *consumer's surplus of satisfaction*. Suppose that I consume in a year a quantity Od of some commodity, say strawberries in this case. Let satisfaction be measured along OY, as before, and let the curve C now show the variation of satisfaction with the amount spent per year on strawberries. It descends because of the law of diminishing

utility. The total satisfaction got by me from the strawberries is obviously $Odhl$. The marginal satisfaction derived from a small increment of strawberries, multiplied by the amount spent upon them, is $Odhf$. The area fhl is my consumer's surplus of satisfaction.

The area fhl is called the consumer's surplus of satisfaction derived from strawberries because it is the net satisfaction which results from my having strawberries. That is to say it expresses the difference made to my income of satisfaction per year by the discovery of strawberries, or the loss of satisfaction which I should sustain if strawberries could no longer be cultivated. This has to be proved; and it can be proved in the following way. The utility

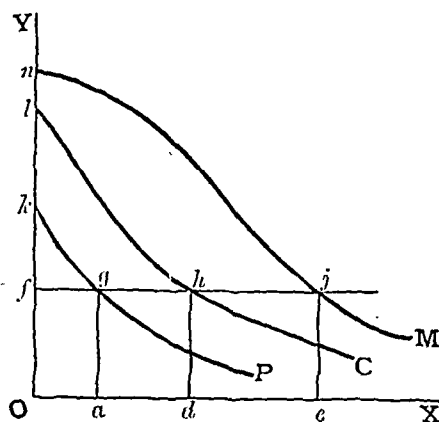


FIG. 4.

of strawberries to me is indicated by the enclosed area in fig. 4, lettered $Odhl$. Hence if the cultivation of strawberries became impossible I should lose an amount of utility equal to the area $Odhl$. But against this loss a gain has to be set. At any rate I should save per annum what I used to spend on strawberries per annum. Suppose I used to spend 10s. per annum on strawberries; then I save 10s. per annum. Now the utility obtained by the expenditure of the last shilling on strawberries is represented approximately by $dh \times \frac{Od}{10}$, that is by $\frac{Odhf}{10}$. And my income is so distributed according to the law of substitution or equi-marginal returns (see pages 44-6) that the marginal returns of a shilling upon what-

ever it is spent is the same. Hence when I come to spend the 10s. that I used to spend on strawberries on other things I cannot get a greater utility for any shilling than $\frac{Odhf}{10}$ approximately. And I should so lay out the 10s., spending a little of it on each of a number of other things, that for no one shilling should I get a satisfaction appreciably less than $\frac{Odhf}{10}$. I should buy a few more cherries, drink some pints more of lemonade, consume a few more apples and so forth until the 10s. was accounted for. Hence my gain in satisfaction would be approximately the marginal satisfaction of spending multiplied by the amount I save, that is an amount $\frac{Odhf}{10} \times 10$, which is equal to $Odhf$. But I have lost satisfaction $Odhl$ from the loss of the strawberries, as we have seen. Therefore the loss in utility from the loss of strawberries is $Odhl - Odhf$, that is fhl , which has been defined as consumer's surplus. Again, the consumer's surplus of satisfaction derived from the thing to which the curve P relates is fgh , while that derived from the thing to which the curve M relates is fjn .

The measurement in money of consumers' surpluses.

—*Consumer's surplus is sometimes measured in money, and, as it is easy to misinterpret consumer's surplus when so measured, it will not be superfluous to say a few words about this expression of it.* I pay, say, 6d. a pound for strawberries and buy 20 lb. a year. Suppose I would pay 18s. for the 20 lb. rather than go without strawberries entirely, that is to say, suppose the aggregate of my demand prices per pound for strawberries up to the twentieth pound (as shown by my demand schedule) amounts to 18s. Then my consumer's surplus derived from strawberries is 18s. less the 10s. I spend on them, that is 8s. I lose a consumer's surplus of 8s. when strawberries cease to be grown. That is to say, *the disappearance of strawberries would have the same effect upon me as a reduction of my income by 8s. a year.* It has been assumed in this argument that the

readjustment of my expenditure would not appreciably affect the utility of money, and this assumption is permissible since the total sum spent on strawberries is small in relation to my total expenditure. Such a money measure of consumer's surplus would be inexact if we were dealing with something upon which a large proportion of my income was laid out. But otherwise, consumer's surplus in money is the difference between what we do give and what we would give for a thing rather than be deprived of it altogether. This is manifest when the thing is a single article like a picture.

The objection has been brought against the doctrine of consumer's surplus that the initial demand price for an article may be the whole of the consumer's income. Rather than die of thirst, a person would offer all that he possessed for a glass of water. We may at once agree that in a case of this kind the consumer's surplus enjoyed on the whole consumption cannot be measured, though absolute increases and absolute decreases of consumer's surplus up to a certain limit can be measured. The majority of cases, however, are not of this kind, because an article is seldom an indispensable means of preserving life or making it worth living. Deprived of cake, we can still feast on muffins and bread and butter, and deprived even of wheat we can still devise satisfactory meals by substituting for it rye, oats, and potatoes.

Total consumers' surplus in a country as a whole.—The money expression in the aggregate of the surpluses derived by a whole community from consuming something raises new difficulties. It must, therefore, be introduced with the greatest caution. These difficulties emerge out of the circumstance that the so-called utility enjoyed by one person cannot be added to that enjoyed by another person, or, if it can, that the marginal utility of money would not be the same to all the people who consumed the commodity, say strawberries. Putting the consumers' surpluses yielded in a country by strawberries at £10,000 a year, the

loss of strawberries would only have the same effect as the reduction of the national income by £10,000 a year if the reduction were so distributed that the incomes of people who did not consume strawberries were not curtailed, while the income of each person who did was diminished by the amount of the consumer's surplus which he derived from strawberries. However, if we take two commodities used by about the same classes in roughly the same relative degrees and the consumers' surplus on one is £6000 a year and on the other £12,000 a year, the probability is that the community would lose twice as much through the withdrawal of the one with the greater consumers' surplus as through the withdrawal of the other. Certain important practical applications of this doctrine will become apparent in a later part of this book.

If we use the demand for a thing over a certain period as one factor in the expression of the consumers' surplus in money derived from that thing, we must be sure that units of the thing do not last longer than the stated period. The demand schedule for grand pianos in England in 1910 (if it were discoverable) taken in conjunction with their price would not show the consumers' surplus yielded by them in England in 1910, for many people in England with grand pianos in 1910 would have bought them before 1910. In a case of this kind, it would be necessary to make allowance for the supplies of the article already in use, and the prices paid for them. Actually it is never possible to measure the whole of the consumers' surplus yielded by a thing over any period, but it is possible to measure approximately the effects of price variations upon it.

CHAPTER VI.

VALUE, GOODS, AND WEALTH.

Value.—There has been some confusion over the term “value”. It is ambiguous; and may refer to *value in use* or *value in exchange*. The *value in use* of a thing is the utility derived from using the thing; and, as we have found it scientifically necessary to discriminate between marginal utility and total utility, so we must distinguish *marginal value in use* from *total value in use*. Value in exchange means what a thing can be exchanged for. If what it can be exchanged for is stated in money, value in exchange is called “*price*”. Now, we have learnt that different things are bought in such proportions by different persons that the ratios which the marginal utilities of things bear to one another are the same for all the persons who buy them, and that things exchange for one another in the same ratios. Consequently, *values in exchange are objective expressions of marginal values in use, which are subjective*. Hence, things that are scarce in relation to the demand for them have a high value in exchange though their total value in use may not be great; while things which are plentiful in relation to demand have an insignificant value in exchange though their total value in use may be enormous. Some things, indeed, which are so plentiful that their marginal utility is zero, have absolutely no value in exchange. They may have immense aggregate value in use, but ordinarily we should take this for granted and hardly notice it, if we noticed it at all :

it is only when the well runs dry that we become fully alive to the value of water. In positive economics, "value in use" has, of course, no ethical significances; it stands solely for the utility that things actually have for us, not for the estimation in which we ought to hold them.

Some writers have distinguished between elemental, form, place and time utility or value in use. Coal has *elemental utility* even when undisturbed in a coal-seam. It is given *form utility* when hewn and broken into pieces of convenient size. It has a maximum of *place utility* in the coal-scuttle by the fireside and its highest *time utility* in the winter.

Goods and wealth.—We are now prepared to define "*wealth*". It has a broad and a narrow reference in positive economics. Broadly it means anything which satisfies human wants, directly or indirectly, that is anything which has value in use, and, thus broadly conceived, it is sometimes known as *goods*. Goods may be classified as follows:—

Goods	{	External	Material	{ transferable (1)
				{ non-transferable (2)
		Internal - Personal	Personal	{ transferable (3)
				{ non-transferable (4)
				non-transferable (5)

A "transferable" thing is not always a "transportable" thing: it is merely a thing potentially capable of being bought and sold.

We thus reach five classes of goods. A few examples will help the reader better than definitions to realize each class.

Examples of external-material-transferable goods are bread, butter, and furniture.

Examples of external-material-non-transferable goods are sunlight, climate, and the dykes of Holland.

An example of external-personal-transferable goods is the goodwill of a business which can be sold. This is personal because it consists in the habits of persons (the customers

of the business); but, though personal, it is external to the person to whom it is wealth; and it is transferable because it can be bought and sold.

An example of external-personal-non-transferable goods is furnished by so much of a business connexion as cannot be sold because it is attached to a particular person. Some of a tailor's customers, for instance, would transfer their custom to another firm when he retired, instead of dealing with his successor in the same shop; they being customers through a personal connexion only. Another example is a nation's good repute.

Internal-personal-non-transferable goods consist in our powers, faculties, habits, and tastes, which are of value to us—the dexterity, for instance, of violinist or carpenter.

Now "*wealth*" may be used as synonymous with "*goods*". This is its widest significance. Next in width is the conception of wealth as all goods except internal goods. It is argued for the exclusion of internal goods that it is well not to confound the customary distinction between man, on the one side, and the wealth to which his activities have reference, on the other side. More narrowly "*wealth*" may be understood in a variety of ways. It has been confined to the things satisfying human wants which are *limited in quantity*; again, it has been confined to such only of these things as are *produced by labour*; and yet again, it has been said that *transferability* is an essential attribute of wealth. Nothing but convenience turns upon the dispute about what has to be included in wealth. No particular definition will be selected here, but the context will always make plain what exactly is meant when the term "*wealth*" is employed.

It is a truism, but a point to fix in our minds nevertheless, that external goods are goods only in relation to internal goods, and that many internal goods can be realized only through external goods. The value of a picture is acquired by seeing it

with appreciation, and the taste for pictures affords us no enjoyment till pictures are seen. Man not only produces wealth in the ordinarily recognized ways, but also makes it in the sense in which Kant meant his doctrine that "man makes nature". The greater the appreciative power of a people the greater is their potential opulence: Shakespeare's plays are not wealth to barbarians. Education enhances appreciative power and therefore makes wealth. In the light of this paragraph we shall at once admit the incontrovertibility of the statement that, while the demands for things create activities, activities themselves create demands for things. We shall also comprehend more fully that the value of a thing must vary with time, place, and circumstances.

The notion that the attitude of man to things makes wealth recalls Ruskin's dogma that "all wealth is Life" and his distinction between wealth and illth. Ruskin had in mind what men ought to want and not what they actually do want in any given stage of social development. In short, his discussion of wealth belongs to economic ethics rather than to positive economics. But it is imperative to remind ourselves that people change their notions as regards the goods which are most worth having, and that progress, in one of its highest senses, is measured by the rate at which their notions approximate to true ethical conceptions. Sometimes wealth ethically conceived is called "*real wealth*," but this term is equivocal and is used more commonly in economics to indicate the contrast between wealth in money on the one hand and in terms of the goods that it can purchase on the other. *Real income* is used in a similar sense.

Nor does this exhaust the distinctions to be recognized. It is necessary to distinguish further between the wealth in which all share, which is *social wealth*, and *private wealth*, which needs no explanation. Social wealth may be such that none can be precluded from enjoying it—that is external non-

transferable goods, whether material or immaterial—like a healthy climate and commendable social customs ; or it may be public property (transferable goods) like pictures in public galleries. There is also the contrast to draw between *goods of the first order*, which yield satisfaction directly, like bread, and *goods of the second or higher orders* or *intermediate goods*, of which class machinery is one of the largest sections. To illustrate the distinctions between goods of the second and higher orders, it is sufficient to say that a machine-tool for making machinery is of a higher order than the machinery which it makes, and that the machines which make the frying-pan are of a higher order than the frying-pan, which aids in the performance of the last productive process whereby some forms of food are rendered ultimate consumers' goods. "Higher," of course, simply means more indirectly connected with the creation of satisfaction. Goods and wealth can be at the same time of the first and a higher order, for instance the motor-car which takes the doctor on his rounds and at the same time affords him direct gratification. Personal wealth is no exception ; thus æsthetic appreciation is only a direct good to those whose business is unconnected with the fine arts, but it is both a direct and an indirect good to the professional art critic. It is obvious that the utility of intermediate goods is the utility of the goods of the first order which they aid in furnishing referred back to the means by which these direct goods are attained—it is the utility of clean boots which makes the utility of boot-brushes. For this reason intermediate goods are subject to the law of diminishing utility, for they reflect utilities subject to this law ; but, as we shall learn later, they may be subject to diminishing utility for another reason also, connected with their yield as productive agents. The terms *consumers' goods* and *producers' goods* explain themselves.

Necessaries, comforts, and luxuries.—Wealth is com-

monly classified into necessities, comforts, and luxuries, but these sub-classes of wealth have been defined in a variety of ways. Sometimes the distinctions between them are drawn from an ethical point of view, and in this case a condemnatory implication is usually read into "luxury," while necessities are regarded as things essential to proper living. Sometimes, again, the distinctions are made to turn solely upon the reactions of different things upon efficiency broadly regarded. When this is done, we may divide necessities into two classes, and entitle and define the four classes then obtained, as follows :—

Necessaries of life are the things physiologically necessary to maintain existence and secure the continuance of the race. The definition, however, is vague, inasmuch as nothing is said of the average length of life to be assured and the extent of procreation.

Necessaries of efficiency are the things, over and above the necessities of life, the consumption of which adds to the efficiency of human beings to an extent greater in value than the cost of the things consumed. According to this definition, the price of an article is one of the incidents which settle whether it is a necessary of efficiency to any particular person or not.

Comforts are those things which add appreciably to a person's efficiency, but in a degree that has less value than their cost. Here, again, we observe that the price of a thing helps to determine whether it is a comfort or not.

Luxuries are things which when consumed do not appreciably add to, and may even detract from, a person's efficiency.

The reader's attention need hardly be drawn specifically to the fact that this classification is not one which can be applied to wealth objectively. The classification has a subjective reference and a reference also to occupation. A thing which is a comfort to one person, may be a necessary of efficiency to another, and a luxury to a third; and a thing which is a com-

fort to me at one time, or when I am engaged in one kind of work, may be a luxury to me at another time, or when I am engaged in another kind of work.

Thinking in a hurry, we might conclude that wise people who realized the future, and knew exactly how their consumption would affect their efficiency, would aim merely at providing themselves with necessities of existence and of efficiency. But we should be illogical if we deduced such a gloomy conclusion. The real income that we enjoy is the satisfaction that we get out of the things purchased with our money incomes, and the satisfaction derived from a luxury might far transcend that derived from a thing necessary for efficiency. It is a truism, but one not infrequently overlooked, that production is a means and not an end. Even the perfectly wise and perfectly good man might choose the luxury and forego the necessary of efficiency without slipping from his pedestal. He might choose to gratify literary tastes which would earn him nothing, instead of studying book-keeping though the latter might help him in his business. There is no greater mistake than to test every course of action by its effects on production, when we take up the moralist's position. It certainly cannot be said that in the world, as it is now, our highest welfare, or our welfare as we conceive it, is invariably promoted most when we do what magnifies our money income most. But this mistake is not to be charged against political economy. As a positive science it recommends no course of action. It merely explains people's actions in a certain field and points out the effects which succeed different courses of action.

It follows from certain of the considerations advanced above that, though it would pay a slave-owner best, from the monetary point of view, to give his slaves necessities and nothing more, the wage which it is most advantageous for the employer of free men to pay is not to be taken as an amount sufficient only |

to provide necessities of existence and of efficiency. It is not likely that the wage-earner would spend the whole of such a wage on necessities of existence and necessities of efficiency. In fact, he would certainly not do so. At least a few comforts and luxuries would figure in his consumption. Hence, some economists recognize *conventional necessities*. By "*conventional necessities*" they mean any things which a person will insist on buying before he has completed his supply of necessities. Tobacco is to many a conventional necessary: most men, however poor, will buy some tobacco. Conventional necessities are recognized because they must be taken into account when we try to discover what wage will keep the operative at a level of efficiency which, in view of the wage, is most economical from the standpoint of cost of production. But, of course, neither conditions of efficiency, nor what employers would like, settle wages, though they may enter into their determination.

BOOK III.

PRODUCTION OR SUPPLY.

CHAPTER VII.

NATURE OF PRODUCTION AND THE AGENTS OF PRODUCTION.

What is production?—Producing is making utilities. Widely understood it covers :—

1. Obtaining from land or sea, rivers or lakes, things which grow—for instance, farming and rubber-planting, fishing and sealing.

2. Obtaining from the earth, air, or water, things which do not grow in the ordinary sense—for instance, coal-mining, diamond-seeking, and salt-mining, getting power from the wind, and nitrates from the atmosphere.

3. The manufacturing or making-up of things.

4. Transporting things.

5. Arranging for the distribution of things as opposed to their transportation—i.e. the performance of the commercial functions of disposing of goods among those who want them.

6. The direct furnishing of services to consumers—domestic service, singing, and acting, for example.

Certain comments are needed upon this tabulation. We have not distinguished between *things* and the *natural powers* by which their acquisition is facilitated. The reader may bear this distinction in mind, nevertheless; remembering,

however, that it is not always easy to draw. Is coking-coal a thing or a natural power? Is there any essential difference, from an economic point of view, between manufacturing power out of the Falls of Niagara and manufacturing petrol?

It is of value for some purposes to separate the industries which simply *gather* natural products from those which *cultivate* what they gather. An orchid-seeker pays no regard to future supplies. A deep-sea fisherman does, and is careful not to over-exhaust a particular fishery, especially at breeding time. But the deep-sea fisherman does nothing active to cultivate a fresh supply. The farmer, on the other hand, does; he breeds live-stock, and ploughs and harrows his land, and sows seed.

By the *extractive industries* we mean those which take away from a stock which can only be reproduced, if at all, after a very lengthy period. The mining industries are the chief extractive industries. Fishing need not be regarded as extractive, since the food supply for as many fishes as we are likely to want is practically inexhaustible. Farming is not classed as extractive because the elements taken out of the land by a crop can be restored. Land which is carefully worked, and allowed occasionally to lie fallow, is continually brought back by the forces of Nature to its original state after being exhausted by each harvest. Industries which obtain power from water and air are peculiar in that they tap a recurrent supply, the amount of which in the future is not affected by its use in the present. The use of the potential power stored in a high-level lake is, of course, an exception.

Quite narrowly interpreted, to the exclusion of the direct furnishing of services to consumers and of commercial work, "producing" is applied to the operations needed to get a thing, other than mere gathering. So farming would be producing, but deep-sea fishing would not.

The economics of production comprises the scientific observation and analysis of the manner in which wealth is created, and the drawing of generalizations relating to it. Now the creation of wealth, liberally conceived, involves the performance of commercial functions as well as others. *Commercial functions* are the functions of buying and selling, and bringing goods to the notice of customers, and anticipating consumers' demands and conditions of supply; whereas *industrial functions*, broadly regarded, are the functions of growing, extracting or manufacturing anything. Commercial work is inseparably connected with industrial work: industry is broken up into parts and the parts are united by commercial links. A firm manufacturing machinery spends energy in seeking out and buying materials and in discovering where machinery is wanted and arranging for its sale. The end of production is to give to the ultimate consumers things that they want when they want them; and mere manufacturing, farming and mining, do not alone bring this end about. When we glance at production as a whole we at once detect that it consists (1) in *industry*, by which we have agreed to mean the growing, extracting, and making of things, and (2) in *commerce*, that is to say, in arranging that the things made, and the things used in making them, shall be appropriate to the needs of the community, and shall be so distributed that each person, as consumer or producer, shall be able to purchase with the means at his disposal what he wants most rather than what he feels indifferent about. The word "person" in this statement must be held to cover associations.

The actual carrying of things over sea and land, that is *transportation*, we include under industry or the making of things. So to include them will not seem inappropriate, since production even in a factory consists to an appreciable extent in the transporting of things. Ultimately, indeed, pro-

ducing means merely assembling different things in certain relations. To determine *where* to carry things, so far as the carriage takes place outside works, fisheries, farms or mines, is one of the functions of commerce; and we may observe here that the decision where to carry things may be formed before they were produced as well as after.

There has been much profitless hair-splitting over the question what is, and what is not, *productive labour*. What is productive labour, depends upon what we mean by production. If by production we understand simply the creation of tangible things or things that contribute to the making of tangible things, direct services performed for consumers, in so far as they do not contribute to the efficiency of such people in production, thus narrowly conceived, must be designated "unproductive". But, broadly, all is productive labour which yields, or is intended to yield, something of value: it embraces all services which we are prepared to pay for. If, again, we make the distinction between productive and unproductive labour turn on results, labour which has been misapplied so that it is wasted is unproductive. If a company started to cut a canal, and was then compelled to desist because the project was not feasible, the labour already expended would have been unproductive. But the *intention* was not to use labour unproductively.

Among the broad features of production, we may notice that some things may be obtained together, or alternatively, from a given source. Things may be produced *jointly* in a fixed or a variable ratio; and a thing produced jointly may have another source of supply, where it may be produced independently or in a different joint relation. Wool and mutton are produced jointly, but we may breed for mutton or for wool. Wheat and straw are produced jointly, but there are other kinds of straw besides wheat straw. Gas and coke are produced jointly, but in some places there

is natural gas stored in the earth which can be tapped. *Alternative products* are found wherever a set of factors can produce more than one thing though only one thing at a time. This has been illustrated above. A loom may turn out fine cloth or rough cloth. The principle of substitution settles to which purpose the loom is put.

Manufacture specializes the possible uses of materials.—Each stage of production limits the possible uses to which anything that is being worked up can be put. Raw cotton may be made into fine cotton wool for surgical and dental uses, sewing cotton and a multitude of different things. When it is spun, its possible use as cotton wool is eliminated, and the tenuity, toughness, and twist of the yarn produced limit the number of fabrics and sewing cottons into which it can be introduced. When it is woven, its use as sewing cotton is eliminated, and also its use for fabrics of other qualities. As a fabric it can still become many different articles; but finally, as a cotton shirt say, it is specialized to one purpose or a very few purposes.

Suppose we represent some material (for instance wheat or iron-ore, or cotton) by the letter "X" and the possible consumers' or producers' goods which X can become by the small letters of the alphabet. Suppose, moreover, we represent a manufacturing process by "M," and the performance of a manufacturing process on X by multiplying X by M, so that XM means material after undergoing one manufacturing process and $XM^2 (= XM \times M)$ means the material after undergoing two manufacturing processes, and so on. Then we may represent the specialization of the possible uses of a thing, as it passes through stage after stage of manufacturing, as follows:—

The possible uses of X	are	a, b, c, d, e, f, g, h.
" " " XM	"	a, b, c, d, e, f.
" " " XM^2	"	a, b, c, d.
" " " XM^3	"	a, b, c.
" " " XM^4	"	a, b.

One significant conclusion which follows from this analysis is that an immense change can be brought about in the proportions of different finished things in a given community merely by alterations in the later stages of production. The re-arrangement of production which is rendered essential by changes in demand, or in conditions of supply, need not, as a rule, be carried far back in the chain of productive processes; and, as re-arrangement reaches back, so usually it becomes more trifling. This conclusion has an important bearing on the responsiveness to demand of a community on its productive side. It has been said that when production becomes complicated, differentiated, and roundabout, so that the making even of a simple pocket-handkerchief involves the raising of coal, smelting of ore, construction of machinery of many sorts and so on, society is rendered less adaptable to modifications in demand, because altering the supply of anything means altering so much in the productive system. That this view needs qualification, the above analysis renders patent. Moreover, many productive instruments can be devoted to more than one purpose: we may call to mind the variety of work that can be done by any loom, or sewing machine, or lathe.

The agents in production and their efficiency.—The absolutely indispensable agents of production are *labour* and *land*. For convenience “land” is to be understood comprehensively to denote the whole of animate and inanimate nature, exclusive only of human beings, which is of any use economically. It is, however, usual to say now that the agents of production are *land*, *labour*, *capital*, and *enterprise*, though to exercise enterprise is to labour and capital is not really an original, irreducible, element in production. When, among the agents in production, labour is distinguished from enterprise, “labour” means executive power, and “enterprise” means initiating, directing, and designing power.

Under primitive conditions, the executive agent must direct himself ; and, when he does, he is both labour and enterprise. A few workmen still direct themselves, even in the most advanced industrial communities ; but, in the mass, modern industry is initiated and directed by other persons who (1), on the one hand, decide what undertakings to start and on what scale, and start them and govern their policy—thereby exercising what is known as the function of undertakers, entrepreneurs, or “ enterprisers ” as the Americans put it—and (2), on the other hand, plan the methods of producing the things decided upon, organize and direct the production, and establish and maintain relations with the markets for buying and selling—thereby exercising the function of managers. The second function splits up into two, namely industrial managing and commercial managing, which may be in different hands ; and the first function may be conceived also as having an industrial and a commercial side. The duties of undertaking and the duties of managing are opposed here, but they shade off into one another. Commonly, entrepreneurs are the ultimate managers ; but, as recent specialization has brought to the front a class of business men who are almost solely undertakers or entrepreneurs, it will be as well to use “ undertaker ” or “ entrepreneur ” with a connotation exclusive of the detailed managing of a business, as contrasted with the laying down of its policy.

In the problem of the supply of labour of different kinds, including directing labour, we shall be involved when we come to explain rates of wages (pp. 324-5, 326-31), so nothing need be said specifically about it in the present chapter ; but upon the nature and determinants of the *efficiency* of labour a few comments may be made.

Productivity is measured by the value of what is produced. Other things being equal, therefore, the more a community succeeds in discovering and developing the most valuable

powers latent in its population, the more efficient will it be. An educational system, which is such (a) that the potential ability of each child is disclosed and (b) that capacity and character are elicited and appropriately trained up, is highly productive; and the productivity of a community is dependent, further, upon the extent to which people find their way to the work best suited to them. The most useful combination of qualities for the workman varies with circumstances. Sometimes physical strength and endurance are most important; sometimes quickness and skill; or resourcefulness and intelligence, and, it may be, trustworthiness; while under rapidly changing conditions, adaptability is of paramount importance in certain callings. How the demand for some of these qualities is being affected by progress we shall observe later (pp. 89-90, 344).

The efficiency of labour is also governed by climate, the home life, the duration of work, wages and their spending, and the labourer's outlook. A cool bracing climate is invigorating. Work which is interesting is educative; work which is monotonous, or very heavy, or very tiring, devitalizes the labourer in physique, character, and intelligence. Gloomy surroundings, polluted air, and insanitary conditions about the place of work or the home, breed listlessness if not actual disease. Much social betterment work is, evidently, productive, even in the narrow sense, as well as in the broad sense of adding to the amenities of life. Wages and their spending have obviously a direct bearing upon efficiency, as we have already noticed on pages 60-2. The outlook of people also has an influence on their effectiveness, subtle but potent: for example the ambitious operative, devoid of prospects, is apt to work without spirit.

Hereafter we shall have to lay stress on the requirement that production should be appropriate to the needs of society. Production is only kept thus suitable when it is responsive to

changes in demand. A condition of its ready response to such alterations is that the factors in production should move speedily to the trades and places where they are most wanted for the purposes dictated by demand. From this it follows that the *mobility of labour, with reference both to locality and trade*, is of value. These kinds of mobility may be called *horizontal* and contrasted with *vertical mobility*, signifying movement of individuals between grades of labour, which we shall consider more fully on pages 329-31. As the relative sizes and local dispersion of different classes and sections of labour may be modified most easily through the training and geographical disposal of the rising generation, the mobility actually required of adults is less than would at first appear.

Geographical factors naturally contribute also to a country's riches. It is better, other things being equal, to have fertile than unfertile land; while stores of coal and ore, and water-power and fisheries, and a climate which ideally fosters crops without debilitating human beings, are endowments secondary only in worth to a sturdy and gifted racial stock. The accessibility of a country's natural resources is, again, of consequence, as are also such other geographical circumstances as conduce to transportation facilities, immunity from catastrophes having a natural origin (like earthquakes and floods), and security from foreign aggressions.

Adaptability of the productive system.—The productive system has become so excessively complicated that some authorities have feared for its strength and adaptability. The development that has taken place, like the development of machinery, has, of course, been beneficial in lowering the cost of the output; but the more intricate a machine the more liable is it to break down and the less easy is it to repair, and the same might be true of a highly organized productive system, while its delicacy might prevent it from standing the strain of a

considerable and rapid accommodation to new conditions. With its highly specialized firms and specialized labour, its commercial ramifications, its organized markets, specialized traders, credit arrangements, and financial machinery, production, broadly regarded, would seem to have become a system that can suffer disastrous dislocation in many places. It is natural, then, that doubts should have been expressed about its capacity to respond without mishap to a strange situation. But the great European War has now established beyond dispute that its toughness and elasticity are considerable—which is not surprising seeing that the most adaptable organisms are the most complex organisms, and not the least complex,—and it has demonstrated also that in a crisis the State can do a great deal to facilitate transition, repair damages, and prevent collapse. The explanation of the satisfactory way in which the business world withstood the shock caused by the outbreak of war is manifold, but a few points may be specifically noted. Though the processes required to prepare things for consumers may be many, the character of what is finally turned out may be rapidly altered, as we have already seen (p. 68). Specialized labour can soon assume a new but related kind of specialization, and much unspecialized labour can acquire without undue delay some degree of specialization; while much specialized machinery even can be turned to certain uses for which it is not entirely suitable. Moreover, the specialization in the commercial world and the elaborate technique of business serve in part to bring production into correspondence with new demands when changes take place. Finally, production can sustain a large drain of men to the forces, because all who are left in industry can do more work for a time and many persons who would not otherwise be wage-earning can supplement their efforts. This paragraph will be understood more fully after succeeding chapters have been read.

CHAPTER VIII.

CAPITAL.

ALL will agree that capital is an agent in production, though it is not an original element, but all will not agree as to what capital is. The term "capital" is current in distractingly discordant, though related, senses. It has not been found feasible to harmonize them in an all-embracing conception which sacrifices none of the popular ideas associated with the term.

Provisionally, in considering what is capital, we may ignore so-called personal capital, in order that our discussion may not be harassed at the start with more perplexities than we are absolutely compelled to admit. Ultimately its claims to inclusion will have to be weighed.

Capital may be regarded from the *social* and from the *individual* point of view. We shall commence our researches from the social point of view.

What is social capital?—(a) *Let us first examine the view that social capital consists in instrumental goods.* Capital, none will dispute, is correlative to income. *It is wealth which yields an income, or aids in the production of an income, or is intended to do so.* This highly indefinite statement is sufficiently exact to begin with. Nobody denies that factories and machinery, cargo-vessels, fishing-smacks and grain-elevators, manure and the drainage of farms, and vertical holes in the ground leading to coal-measures, are a part of social capital. These things constitute, at least by virtue of

their main purpose, wealth used in order to produce more wealth, or to earn an income of wealth. To the extent to which they are so used, they are the goods of the second and higher orders (see p. 59), which have been called *instrumental goods*. But when we come to scrutinize these goods minutely, we become aware that some of them have direct as well as indirect value—that some of them serve occasionally as goods of the first order—as for instance the ship which carries cargo but at the same time passengers, some of whom are simply at sea on a pleasure cruise. Such a ship is both instrumental and a thing yielding value directly. And when it comes into dock, is the dock wealth of the first order or wealth of one of the higher orders? When the tourists land it is wealth of the first order, but when the other passengers land, and the cargo is got out, lo! it becomes an instrumental thing. Hence we are driven to recognize that instrumental goods and goods with direct value do not make up mutually exclusive classes.

(b) To be strictly logical, then, we must admit, it would seem, that *the use, or intended use, of wealth settles whether it is capital or not*, if we insist on clinging to the idea that capital must be instrumental. Hence the distinction between capital and other wealth becomes in part a psychological one. If I eat my breakfast with my attention concentrated on what I have to do afterwards, and say to myself as I eat it, "I must make a good breakfast because I have heavy work to do this morning and I don't know at what time I shall get lunch," my breakfast is indubitably capital, since it is eaten with a view to my productive efficiency; or, at any rate, it is partially capital, and in this event the awkward question of how much is capital has to be settled. This conception of capital as wealth used for the production of more wealth is sound enough in theory, but it breaks down in practice where it leaves no dividing line between capital and other wealth.

(c) By a natural transition we are next brought to the view that all wealth is capital because all wealth affects income. Some writers escape the conclusion that the ground of distinction between wealth and capital may be a psychological one—namely the intention which underlies the action of consuming wealth—by approaching the question of what constitutes capital along another road. They put the problem in this way: Taking the members of a community just as they are, with their attachment to luxuries, their providence and imprudence, what part of their wealth is a direct or contributory cause of the magnitude of their future income? Any part of their wealth, in the absence of which future income would be less, these writers call “capital”. The answer which they find to their interrogation is that no part of existing wealth fails to exercise a favourable influence upon future income directly or indirectly, except in so far as the community made mistakes in the past and acquired things which they would rather be without, an exception which for general purposes we may set aside as over-subtle. Hence all wealth must be social capital. The reason advanced for this verdict is as follows. If a community were deprived of some part of its consumers' wealth, it would straightway insist on producing it, or something similar to it. To do this would involve some diversion of labour from the manufacture of things which are a direct aid to production, and the diminution of these aids to production would cause a diminution of future income.

A reference to primitive conditions will make fully comprehensible this identification of capital with all external wealth. We ask “What was capital to Robinson Crusoe?” meaning by his capital that part of his wealth which helped to make his income high. The answer is, generally speaking, all that Robinson Crusoe possessed. If he had not saved a store of food one year he would have had to collect food somehow the next year, instead of fashioning the plough to which he then

devoted some of his energy. If at another time his furniture lacked a chair and table, he would have made them instead of constructing the canoe which on its completion raised his income. It is evident that Robinson Crusoe's future income at any time was a function, as the mathematician would put it, of all that he owned.

(d) Other writers reach the same conclusion that all wealth is capital by yet another path. *They argue that all wealth is capital because it produces utilities.* If capital is everything that produces income, and real income is utility or satisfaction, and all wealth yields utility mediately or immediately, they maintain that all wealth must be capital. The distinction between capital and income, as it strikes them, is the distinction between the present value of wealth regarded as a stock (which is capital) and the amount of utility which accrues to the community periodically, that is from year to year according to customary reckoning (which is income). My piano yields me an annual income of utility out of the music that I get from it. The value of the piano as capital is the sum of the discounted values of the incomes yielded by it for as long as it lasts. So a loom yields an annual income, primarily of textile goods but ultimately of their utility, out of the aid that it is in production. The value of the loom as capital is the sum of these annual receipts, discounted, for as long as they last. This notion of capital is clear-cut and leaves nothing in doubt from the point of view of classification; but it is questionable whether it is the most serviceable conception.

Are free gifts of Nature and personal wealth, social capital?—In connexion with these four broad conceptions of capital it now remains to ask two questions:—

Are agents which are free gifts of Nature capital? On every principle of defining capital discussed above, some natural agents would be admitted into the class of capital,

unless we determined in addition to exclude all things not produced by human endeavour. Sometimes such things are excluded, as in the time-worn phrase, "land (meaning natural agents), capital and labour are the factors in production". If we decide, on the contrary, that capital should embrace natural resources, we had better make a point of designating them "natural capital".

Can any wealth which is personal, that is which resides in individuals (see pp. 56-7), be social capital? Natural endowments of capacity should hardly be reckoned as capital if external natural agents are not so reckoned. We had better resolve to reject both, on grounds of convenience. But consider the following case. As I spend wealth in making a type-writing machine so I may spend wealth in training myself to be a typist. If the type-writing machine is capital, is not my acquired type-writing dexterity capital? The affirmative response is logical; but as our attitude to the dead metal in which type-writing power is embodied (that is a type-writing machine) must be different from our attitude to the conscious, volitional organism in which type-writing dexterity is embodied (that is the typist), it complies with the requirements of social science to mark a boundary line between machines and skilled operatives in some, at least, of our classifications. So, if we choose to call the typist's dexterity and similar wealth "capital," let us agree to entitle it "personal capital".

Industrial capital and classification of social capital.

—The reader will probably complain that political economy is for ever creating perplexities which the plain man never feels; and political economy certainly does share with philosophy and all sciences the merit of casting doubt on things ordinarily passed unquestioned, and of compelling the student to form judgments for himself. He must decide for himself what view to take of capital. The next paragraph may, however, remove some of the confusion.

For practical ends it is desirable to introduce the term "*industrial capital*" and agree to a conventional definition. It would be best to confine it to a part of the class of non-personal goods which have been produced by labour. Of these it should include all producers' goods proper (among which materials and unfinished consumers' goods are to be reckoned) and all things which are being used wholly or in the main in business and only incidentally as consumer's goods, like cargo vessels which carry a few passengers for pleasure. On the other hand, it should exclude all consumer's goods, pure and simple, in the hands of consumers, and possibly those in the hands of producers; and all things which figure in the main as consumers' goods but incidentally as producers' goods, like private motor-cars which their owners sometimes make use of for business purposes. Where there was appreciable division of function, as in the case of railway trains which convey numerous holiday-makers, in addition to people travelling to make a living, a rough estimate of the division would have to be framed for any enumeration of the industrial capital in a country. The things under dispute could not bring about a high percentage of error in the total. "Industrial" is, naturally, to be understood broadly to cover agriculture, transportation and trade, as well as industry in the usual sense of the term.

Social capital, more broadly regarded, has been divided into:—

(1) *Auxiliary capital* (that is industrial capital as defined above), which covers everything productively auxiliary to consumers' capital.

(2) *Consumers' capital*, on which consumers live while producing. Machines and factories are auxiliary capital, while houses, clothes, and food are consumers' capital.

It has also been divided into:—

(1) *Fixed capital*, which serves a purpose continuously like machines.

(2) *Circulating capital*, which serves its end but once, like leather, which, when made into boots, is no longer material for making into leather goods.

And yet again social capital has been divided into:—

(1) *Specialized capital*, which is suited only for a single use or a very limited range of uses. Examples are afforded by combing machines and blast furnaces.

(2) *Unspecialized capital*, like factories which are suited for more than one industry, and railway trucks which can carry goods of many sorts. Specialization is naturally a matter of degree.

Private capital.—Private capital is capital regarded from the individual point of view. Upon its nature we need not dwell at any length. An individual's wealth consists in his possession of goods, or share in their possession; and in his claims to goods represented, for instance, by money. The goods of which he owns the whole or the part comprise:—

(1) Personal goods.

(2) Non-personal goods used, or intended to be used, instrumentally, which must be capital to him as well as to society.

(3) Non-personal goods used, or intended to be used, as consumers' goods, (a) by himself, or (b) by others on payment of a consideration to him.

Non-personal consumers' goods for sale, or hire, or actually hired out, are indisputably capital from the individual point of view, because their owner gets no direct satisfaction out of them but utilizes them, or intends to utilize them, to furnish him with an income. Non-personal consumer's goods which are being consumed by their owner are or are not regarded as private capital according to the view taken of capital generally, which may be a wide or a narrow one. So also

are personal goods, but we must add now to our previous treatment that external personal goods, like the goodwill of a business, which have an exchange value cannot logically be torn away from the class of private capital. Coming to a person's money, this is potentially what it will buy, and, looked at in this way, we cannot declare whether it is capital or not to its owner until we have decided what constitutes social capital, and perhaps not until we know the purpose for which the money is intended. If it serves as a working balance for its owner's business it is certainly capital.

An individual's "*business capital*" has a perfectly definite meaning. It denotes (a) his money devoted to business, (b) his goods which are used instrumentally, and (c) his consumers' goods which he lets out to others for a profit or intends to sell. We dis sever from his business capital the consumer's goods used by himself and his money which is not allocated to business. Whether we call these possessions, barred out from *business capital*, "*capital*" of another kind or not, is hardly a matter of vital significance. All that a man has is, of course, potentially business capital to him, because he can dispose of all that he has (except a minimum needed for subsistence till an income accrues to him) and devote the proceeds to business. An individual's *circulating capital* is all his business capital which does not consist in premises and plant.

Production with capital is a roundabout process.—On contrasting production with capital and production without capital, we discover that the former involves getting things in a roundabout fashion. The first hunter chased his game, or lurked in ambush, and killed it when within reach with any handy substance of sufficient hardness. In the next stage of civilization the hunter, we may imagine, spends some time fashioning a rough stone implement before setting out in search of game. In short, he sets to work in a roundabout

way. When he does this he is having recourse to instrumental capital. Or, if we like to take capital in a broad sense, we may say that he has recourse to capital as soon as he begins to consume the store of food set by to maintain him while he makes his stone implement. In a more advanced stage of civilization man's method of procedure becomes even more roundabout. He begins his hunt, so to speak, by mining for ore, which he afterwards smelts and shapes into weapons of the chase.

The peculiarity of a community working with much capital is not that it has laid by large stores of consumable commodities for future use. It will produce most of its consumable commodities as it goes along. Its peculiarity is that a large percentage of its people are engaged in making instruments, and the things of which instruments are made, and in repairing and setting up instruments. By "instruments" I mean instrumental capital—fishing-boats, machinery, and factories and industrial plant of all kinds. In such a community those engaged directly in turning out consumers' commodities are lavishly supplied with mechanical aids. Contrasting such a capitalistic community with a community of the same size without much capital, we discover that most of the population of the latter produce consumers' goods, but turn out a smaller quantity than the former, though far fewer of the population of the former community are directly employed in making consumers' goods.

It goes without saying, nevertheless, that we must not conceive of all economic advance as rendering production more roundabout. Many important inventions are important because they show us short cuts in production and consequently abridge the productive process. These inventions are improvements on previous mechanical ideas. Each step in the assumption of *new* tasks by machinery, however, renders production more indirect or roundabout; and, generally

speaking, the elongating effect of inventions on productive processes has more than offset its curtailing effect.

A process is not more economical because it is more roundabout. But it happens that the more economical ways of doing things are frequently the more roundabout. And we naturally apply first the least roundabout of the ways of doing a thing with which we are acquainted, other things being equal. The peculiar economies associated with the use of machinery will be brought out in Chapter IX. The present chapter may be concluded with the obvious remark that it is not merely the quantity of capital that is of importance to a community, but also its application and the form which the fixed part of it assumes.

CHAPTER IX.

MACHINERY AND DIVISION OF LABOUR.

The economies of substituting machinery for labour.—Why does it pay to use any engines, machinery or implements at all? It pays for the following reasons:—

(a) For most sorts of work, implements facilitate the application of labour, or may even be indispensable.

(b) The stupendous forces of nature can be pressed into the service of man when engines exist to transmit them and machines for them to drive. A vast amount of highly valuable work is now done for the performance of which the strength of the most powerful animals would be totally inadequate; and for the application of animal, other than human, forces to production, mechanical appliances are equally indispensable.

(c) Machinery can work faster than human limbs can move.

(d) Machinery works more accurately than the human being, because a machine exactly repeats its movements, whereas even the most dexterous operative cannot depend upon exactly repeating his movements. In the power-loom the shuttle is hit with the same force at every stroke; so the tension on the weft is kept always the same and the fabric comes out even. No hand-loom weaver could throw the shuttle with the same velocity every time, or, after the invention of the fly-shuttle, give always the same jerk to the picking-peg which makes the hammers hit the shuttle. But just as some machine production is superior to hand-work,

so some hand-work is superior—almost infinitely so—to machine-work. The most pleasing pictures cannot be produced by machinery. However, to the objection that the use of machinery banishes artistic quality from our products, and therefore undermines taste, and brings about ugliness in our surroundings, it may be replied that the bad effects are not caused by the proper use of machinery but by its abuse. Little artistic feeling can be expressed in making plain druggets, sackcloth, and kettles. And machinery can repeat artistic designs cheaply, and thus bring them within the reach of the masses. Where the line should be drawn between this mechanical reproduction and the production of original artistic work of his own by the artisan, each community must decide for itself and express through demand. This matter raises issues which will be discussed in the concluding section of the present chapter.

What becomes of the displaced labour?—When the production of anything is made easier by the introduction of labour-saving machinery, what becomes of the labour no longer required to turn out the article in question in its old quantities? Thus, suppose a community used to buy 100,000 pairs of stockings a year and 1000 workpeople were engaged in making them. When a machine was introduced which enabled the 100,000 pairs of stockings to be turned out by 500 hands, what would become of the remaining 500 workpeople? Ultimately, if not immediately, the whole of the 500 would be found active in production, for the following reasons:—

(1) After the appearance of the labour-saving machinery, stockings would be cheaper and more than 100,000 pairs a year would be bought. Conceivably, as much labour as before, or even more than before, might be engaged in making them; and in any event less than 500 persons would be dismissed.

(2) Extra labour might be needed for machine-making for the stocking industry. However, we must allow that it might not, as the new machinery might be so simple that less labour would be called upon to construct new machinery for the larger output of stockings than was called upon to construct the old machinery for the old output.

(3) Any displaced labour which was not absorbed by machine-making would be used to provide other goods (hats and ribbons and rides in hansom cabs) which people would be able to afford when they got their stockings cheaper.

(4) Even if we argue on the absurd hypothesis that all people were surfeited with their real incomes before the introduction of the labour-saving machinery, and would not therefore demand any additional goods, it will be found that any displaced labour would still be re-absorbed. It would then be used to provide more leisure. So the case is identical with that just considered. People would buy more leisure if they would not buy more commodities. Their earnings would buy more, and as they wanted no more commodities they would work shorter hours, thus creating a gap in the labour supply for the displaced workpeople to fill. Actually, people would probably buy a few more commodities and a little more leisure.

(5) The imaginary case could be put, in response to the last argument, that people might continue working the old time, but save their additional incomes instead of spending them. But the savings when invested would employ labour, as they would also when hoarded, since it is tangible valuables which have been produced that are hoarded.

When new machinery appears some operatives may lose employment *for a time*, and others advanced in years may lose it altogether. Moreover, displaced operatives when engaged again, but at work new to them, probably earn less than before. Great hardship may consequently be caused

to individuals, but this matter is not under discussion now; and with regard to the allied question of the character of the labour required by machinery, as compared with the character of the labour displaced, and the effect of machinery on the well-being of the community, some remarks will be found on pages 88-90. Meanwhile it is important to note that the substitution of machinery for labour can often be effected without throwing any people out of work, even temporarily. New inventions are slowly adopted as a rule, while at first, owing to their imperfections, the saving in labour effected by them is usually small; so that a re-direction merely of the labour of the rising generation may accomplish all that is required, especially in a growing society. An unrecruited industry shrinks at an increasing pace, and in a decade its shrinkage must be considerable. The amount of labour displacement, if any, caused by new machinery depends upon the rate at which the new machinery is introduced. The duration of the unemployment caused, if any, depends (among other things) upon the powers of enterprise and capital to respond to a new situation, and people's capacity to adjust themselves to new trades. As regards this adjustment, it is also to be borne in mind that the absorption of any displaced labour can be indirect, and need not be direct. Industries that require more labour will tend to get the most suitable to be had; any gaps thereby created in other occupations will again tend to be filled in turn by the labour most suitable to fill them that can be attracted; and so on, with the result that the labour first displaced will tend to be drawn into vacancies which it is most capable of filling satisfactorily.

Economies of specialized labour and machinery.—Specialization is sometimes called "division of labour," for traditional reasons. But "specialization" is perhaps the more appropriate term now that machinery figures so largely

in a modern economy. If the term "division of labour" is employed, it must be understood that "labour" stands for processes and that division of labour covers division of machinery, so to speak.

Consider first *the productive advantages of specialized labour*. The man who undertakes many offices never acquires expertness at any one. Even if he forms habits, the habits never become thoroughly ingrained. Usually he has to keep on thinking how to execute each task, and therefore he works slowly and laboriously and wastes energy. Accomplished cyclists, when they contrast their early struggles to ride with their performances after the habit of riding became fixed, will fully realize this economy in specialism. Again, the man who has many duties assigned to him wastes time in passing from one job to another.

Enough has been said to show that the productivity of labour should rise as labour is specialized ; but, before leaving the advantages of specializing labour, we should notice that the specialization of labour may lead to inventions which inaugurate further economy. Specialized labour, in contracting a habit, tends to abbreviate a productive process and reduce it to a co-ordination of a few simple movements. So it mechanizes processes and renders it possible for machinery to assume them. Moreover, specialized workers who can concentrate their attention are more likely to hit upon mechanical ideas than workers whose attention is diffused.

Now, coming to the *economies of specialized machinery*, we observe at once that "division of machinery" facilitates division of labour ; and that, in addition to this indirect advantage, it means a direct aid to production. A sewing-machine adapted for hemming cambric handkerchiefs and sheets cannot be particularly appropriate for either class of work, while time is wasted when the sewing-machine is turned from the one class of work to the other and re-adjusted

accordingly. Clearly, specialized machinery must be more productive than unspecialized machinery. The former is more closely adapted to its ends and, when there is enough for it to do, can be worked more uninterruptedly.

Effect of specialization and machinery on labour.—The productiveness of a method of production is not the sole test of its value—to get many commodities is not the only end of life. It might, in the best sense, pay a community to reject the most productive method of making something because it degraded human nature or made work uninteresting. Adam Smith said that in his day a workman in a pin-factory made the eighteenth part of a pin, and another writer surmised that the man was made worth the eighteenth part of a pin in being confined to such a limited task. Was the critic right? It is certainly important that we should inquire—especially in view of the minuteness of specialization in modern industry—whether human nature is degraded by specialization. But this is not a question upon which an economist is necessarily qualified to offer an opinion. The issues involved are largely psychological and social. So my aim here must chiefly be to indicate the considerations to be weighed; and in passing judgments I shall be speaking tentatively.

The division of labour which makes work mechanical robs it of interest. But it has been remarked that a man may think at his work, if not about his work, provided that it is not exhausting—and the lively intelligence of many of the old hand-loom weavers was commonly recognized. Apart from any compensation of this kind, however, work which is merely mechanical must be narrowing. But we must not jump to the conclusion that specialization which restricts the sphere of a person's attention is therefore narrowing. It does not necessarily render work more mechanical. Intensity of interest may take the place of extensity of interest, and the

former may arouse intellectual powers which were unresponsive to the latter. When a man toils at some special detail of a manufacturing process, he may find in it an amazing intricacy which has a fascination; and only he who sees this intricacy can discover how to improve the process. It must, however, be confessed that the rank and file have lost something in so far as specialization has taken from the artisan the need of being an artist. Whether this is to be deplored or not, from the point of view of society as a whole, raises questions outside the peculiar domain of economics. Is it good that a Van Dyck should have his paints, canvases, and brushes prepared for him? When painters gave up the artisan part of their work, specialism created a number of new non-artistic offices. But the world is the richer in great pictures.

Fortunately the mere fact that a particular task is mechanical, in the sense that it demands the constant repetition of some few simple movements, renders it likely that a mechanical contrivance will be invented for its performance. But inventions do not as a rule, in their first shape, at once eliminate all mechanical work. Indeed, they sometimes create a need for the tedious repetition of certain human actions to supplement appliances, as, for instance, feeding and receiving deliveries from semi-automatic machines. Generally speaking, I should say that invention in its first stages, while calling for some labour of greater intelligence than that which had previously been employed, frequently entails a certain amount of work for which a very low grade of labour is efficient enough. Through improvements, however, it is likely that much of this work will be assigned eventually to machinery.

The adoption of machinery invariably causes some substitution of intelligence for dexterity. The person who was in effect a machine by reason of his dexterity gives place to one who can understand and direct a mechanical process. In a mechanical age the demand for labour tends increasingly to

take the form of a demand for capacity to control machinery, that is for specialized mechanical skill of a kind which implies both general intelligence and powers of adaptation. Machinery alters fast and the operative's understanding must keep up with its evolution. Machinery calls for more trained intelligence, less dexterity on the whole, and, in transitory phases of development, for much labour which need not possess either intelligence or dexterity. The most significant thing is the usurpation by intelligence of the position originally held by dexterity (which means the man-machine). Finally, we must remind ourselves, lest this argument leave one-sided impressions, that, in striking a balance between the advantages and disadvantages of machinery, both objective gains, in increased tangible income, and subjective gains or losses, in terms of the satisfaction derived from work, must be taken into account. The objective gains are immense.

Some people are still only half-reconciled to production with power-driven machinery because the conditions of life which prevail where its conquests are most complete—the conditions of life in huge dreary towns in the midst of smoke which destroys vegetation and intercepts the sun's light—are peculiarly repugnant to them. But these depressing conditions are removable. Smoke-consuming devices are becoming less costly. We are awakening to the possibility of making industrial towns beautiful. And the interweaving of transportation facilities, combined with the *standardization* of machinery, is constantly magnifying the relative economies of producing many things away from the very large towns. To-day when machinery breaks down standardized parts may be sent to take the places of the parts which have given way.

CHAPTER X.

THE GROWTH AND SPECIALIZATION OF BUSINESSES.

THE nature of production is outlined in the three previous chapters, but some detail has yet to be picked out in the sketch there presented. Looked at more closely, production is discovered to be divided up into industries and each industry into businesses. There are the industries of dairy-farming, herring-fishing, boiler-making, boot-making, and so on. And constituting these industries are multitudes of businesses or firms, variously organized and inter-related. Despite conventional usage, the terms "a business" and "a firm" will be employed here as perfect synonyms, and applied with reference to any industry, whether farming, manufacturing, or what not, unless another meaning is implied by the context.

Attention must now be drawn to certain features of these small producing systems or businesses. They have many interesting features, all of which call for notice in due course. There are the commercial, or buying and selling, relations between them which we pass over at first: to these relations we shall apply our analysis in Chapter XII. Again, there are the great types of industrial organization labelled "Joint-Stock Companies," "Co-operation," "Kartels," "Trusts," and so forth, the study of which must be relegated to a future chapter. To the existence of this diversity of industrial form we may be sedulously blind until that future chapter is reached. Indeed, we may go to the length of assuming

that it does not exist, and premise that every business in every field of industry is a private business under the control of a single employer, its owner.

The growth of businesses.—For the moment it will be advantageous to concentrate upon one thought only, namely that *law* and not *chance* governs in the main the size of each fully-grown business in each industry. There is no tendency in most industries for one business to swell out to enormous proportions and so feed on its successes that it crowds out other businesses and devours the whole market. Up to a point, a firm tends to grow because the larger it becomes the more economically can it produce, other things being equal. Beyond that point, further growth entails less economical production.

Let us try to watch in imagination the experiences of a growing business. For simplicity suppose it produces one article only. Take a village shoemaker with a small connexion who does all his work himself, and does not provide himself with more than an insignificant quantity of specialized machinery. He does not buy a sewing-machine, let us suppose, because he could only work it for, say, ten hours a week, and it would not be profitable to buy one for such limited use. But, when our shoemaker's connexion grows, he engages an assistant, and, by specializing their labour, the two together turn out more than twice as much as either could when working alone. It might now pay the shoemaker to acquire a sewing-machine, because it could be kept running for a longer time each week than before. Finally, after engaging more and more assistants, it pays him to have other kinds of machinery also, say even a machine to sew on buttons, because there is enough work to keep even it running for a long time each working day; and it pays him also to specialize his machinery to a great extent—to have, say, one sewing machine for making the uppers of ladies' and

children's boots, and one for making the uppers of men's boots.

No proof is needed that more machinery per head of labour will be introduced as the business enlarges. The men who sew the uppers of boots together use sewing-machines for the purpose as much in the later stage of development of the business as in the earlier stage. But for the three men, say, who used to sew on buttons, one man and a machine are finally substituted. Hence there is more machinery per unit of labour in the business when it is larger. We may imagine that there exist potentially illimitable possibilities of specializing machinery—fresh mechanical ideas can be worked out and applied as sufficient work is provided. It is the economies associated with the introduction of machinery, and the specialization of labour and machinery (see pp. 83, 86-8, which bring about *group production*, that is production by large groups of factors in such a manner that each group works as a unit or systematic whole.

Is there any end to the growth of a business? Certainly there would seem to be ordinarily, even if we consider the question solely from the productive side. The magnitude of a continually expanding business would finally transcend the powers of control of the employer or board of directors, in the great majority of cases at least. It would become unwieldy, and unresponsive to the needs of its circle of customers. Then cost of production would rise, because of the inadequacy of the direction under which the business functioned. So we may generalize and affirm that the potential size of a business is governed by:—

1. The capacity of the employer.

2. The character of the market—whether it needs careful attention or not and necessitates constant modification in the work turned out by the factory.

3. The complexity of the work done in the factory.

When his factory has reached the maximum size the employer's enterprise need not be checked. He may put in a manager and start another factory and control the policy of both. In doing this he is still further specializing himself; and he may, of course, discover that he has over-reached his powers. All along he has been specializing. He has been successively (a) self-directed, undertaking, unspecialized workman; (b) undertaking manager and specialized workman; (c) undertaking manager; and (d) undertaker.

We are generalizing here about the potential size of the individual business, as we may say, meaning the size to which it can attain, provided the employer is not starved for want of capital, or want of orders when he can produce cheaply enough to deserve them. We have been asking in effect, to use a physiological analogy, what governs the size to which an organism can attain provided it gets a sufficiency of the right sort of food, only the organism about which we have been inquiring is a firm which is an economic organism. Questions of marketing and of control over capital enter into the determination of the size of a business, but for the time being it must suffice merely to mention these questions and refer the reader to pages 99-100, 130. Admittedly, the large business has greater advantages in facilities for obtaining capital and credit, in various selling economies, in a greater power of advertisement (where this is of value), and also in a greater capacity to take risks.

Returning to the purely productive problem, we have asked why a business grows and why it does not grow indefinitely, and our answer was in effect this. When a business grows the executive agents become more highly specialized and so more valuable, and more machinery per man can be used. The employer, too, becomes more highly specialized up to a point, and so more valuable. But, beyond this point, the employer can specialize no more, and, if the business still

grows, the field to which he has to give attention is extended and his attention must be diffused.

Broadly regarded, personal specialization has a two-fold implication. It implies on the one hand a limitation of the variety of a person's work, and on the other hand a limitation merely of the quantity of things with which a person deals. In order to escape the inconvenience of an ambiguous terminology, we had better not call the second process *specialization*. It is best to call it, say, *concentration*. The opposite of *concentration* is *diffusion*. As a business grows, the employer's attention as a manager is diffused, but, so long as he is specializing at the same time, he gets liberated from other duties and can manage more factors in production. After a time, however, he cannot relieve himself of any more functions, and as the business goes on growing his attention is more and more distracted. The effectiveness of his management per unit of the factors organized, therefore, begins to diminish. It is true that the larger the business becomes the richer it becomes in latent economies by way of the use of machinery and specialization of its factors. But these latent economies do not automatically become actual. The employer designs them, and he cannot design any more if he has too many things to think about already. Consequently, many of the latent economies may remain latent. And all the time as the business expands the employer's oversight is being diffused and his control per unit controlled is being weakened. The time is likely to come, therefore, when a further expansion of the business results in a balance of loss. Delegation of responsibility or greater complexity in the organization of control and management may put off the evil day—which raises the special problems discussed on pages 136-8—and there certainly are circumstances in which great industrial combinations flourish; but for the generality of cases our conclusion holds at some stage of growth.

So, to sum up as regards the simple illustrative case which we took of a business which produces one kind of article only, we may say (1) that after a certain point has been reached in the enlargement of a business, other things being equal, its marginal expenses tend to rise, and (2) that the position of equilibrium, respecting its size, is reached when its marginal expenses equal price. The influences which retard the operation of the tendency towards this position of equilibrium are discussed on pages 99-100. *Marginal expenses* mean the additions made to total expenses by incrementally enlarging the business. It might be objected that the employer would insist on getting a price a little above the marginal cost of production in his works, because he would want something for himself for the extra trouble to which he was put by undertaking the production of the last increment that he turned out. Strictly this objection may hold good, but the extra income that the employer would want for himself would be negligible because the extra trouble involved in the production of the last increment would be negligible. We are not evading a difficulty when we affirm that the trouble of working an industrial capital of £10,010 is not recognizably greater than the trouble of working in the same way an industrial capital of £10,000.

We may note in passing that what is called the *marginal return* of a business may be obtained from the marginal expense by dividing the unit of money, with reference to which returns are being measured, by the marginal expense. Thus, if we are measuring returns with reference to sums of £1 and the marginal expense of a pair of slippers in a business is 2s. 6d., the marginal return in that business (per £1) is 8 pairs of slippers.

The normal magnitude of the business.—In fig. 5 measure along OX units of produce of a business, and along OY units of money. Assume constancy in the money costs of factors in pro-

duction and in the price of the product. The curve *P* shows by the vertical distances between it and *OX* at different places what employer's marginal expenses (apart from any remuneration for the employer's work) would be, in the case of a particular business, for the various possible sizes of the business which are indicated by the units of output measured along *OX*. Thus, if the output is *Og*, employer's marginal expenses will be *bg* and total employer's expenses will be represented by *Oghma*. The curve *P* first descends, for reasons explained above, and then ascends. The size of the business in units of output will be *Og* if *bg* equals price. The curve *Q* relates to a more capable employer. If the

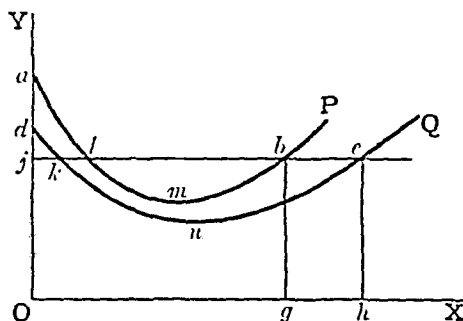


FIG. 5.

first business is of the size *Og*, his will be of the size *Oh* because *ch* must equal—that is, of course, tend to equal—*bg*. Note that *Og* must be such that *lmb* is substantially greater than *ajl*, as otherwise the employer would make little or nothing for himself, seeing that his gross receipts are *Ogbj*, that is output, *Og*, multiplied by price, *bg*.

The law of substitution, indifference, or equi-marginal returns.—This will be a suitable place to point out that, just as an employer tries to make his business of such a size that his marginal costs as a whole equal price, so he tries to use factors in production of different sorts in such quantities that the marginal return of each of them equals its cost. Employers' marginal costs of production, as a whole and in relation to each factor in production, may not be explicitly

recognized by a wide circle in the business world, but that, with or without names, they play leading parts may be inferred from the fact that agents in production are not grouped chaotically and that businesses seldom reach unwieldy dimensions.

When we try to envisage the tasks of industrial and commercial directors, it soon becomes apparent that both can be brought under the law of substitution, indifference, or equi-marginal returns in certain respects. The producer who is farmer or manufacturer has to maximize the returns obtained from a given expenditure on material or land, labour, instruments, and accessories; and, just as I, in spending my income, get the best results when my marginal returns per unit of expenditure on different things are equal, so he must get the best results when his marginal returns per unit of expenditure on each agent of production are equal. The proof given on pages 44-6 applies here, but let us take a specific example nevertheless. A manufacturer, say, is making steel. If he adds £2 a week to his wages bill to increase his staff of labourers, suppose his weekly product will be raised by *one* ton of steel. If he adds £2 a week to his interest account to increase his capital, suppose his weekly product will be raised by *two* tons of steel. Then he will borrow more capital and possibly reduce his labour. And so he will proceed until a unit of additional expenditure will have the same effect on his output whether it purchases labour or capital. It should be superfluous to add that the employer's office of grouping and marshalling the agents in production seldom becomes a sinecure, when a business is not left to decay. Industrial, including agricultural, development is constantly necessitating re-arrangement of the factors in production: every invention or alteration in the costs of different factors renders re-adjustment economical. As to the trader, he also will act like the industrial organizer, for the trader prospers

in the degree in which he so distributes the supplies of an article between different places that the prices paid to him in different places, less his expenses, become equal.

This reference to the work of industrial organizers and traders is by no means exhaustive, and the reader must be on his guard against imagining that their work is simpler than it is. The trader has also to keep himself constantly informed of what is and can be produced and of changes in costs, while studying, in addition, the needs of different markets and anticipating to some extent. And the industrial organizer has to go even further beyond a mere mechanical application of the law of equi-marginal returns. He has to choose machinery and change it as need arises; decide on the classes of labour that he needs; select his workpeople, after studying the ruling rates of wages; assign their tasks to them; settle how particular processes have to be performed; and arrange, as far as he can, for such systems of paying wages, and such hours of labour and conditions of work generally, that the best results are attained. All this and something more, over and above the determination (so far as it rests with him) of what to produce and when and how much of each thing, is required of the efficient employer. Recently much has been written under the title "Scientific Management" about the value of scientific methods in the practical solution of problems of industrial organization. The economic questions raised by the various duties of traders and industrial organizers will be examined in some detail in due course.

Expansion and contraction of businesses.—It seldom happens that individual businesses spring up to their full sizes in a few months. They may take years, even generations, to attain full maturity. The rate at which a firm grows depends upon its ability to win its way in the market or earn the confidence which is the source of its borrowing powers. Businesses attain their maximum size much more rapidly

in some industries than in others (see p. 130). And just as businesses may grow up slowly so they may die down slowly. As it has been appropriately said, an industry is like a forest and the businesses in it are like the trees. Every industry contains some young and growing firms, some which have reached maturity, and others which are dwindling as they lose their hold on the market. The generation which made a firm pass away, and its successors in control may be less fit than their predecessors to hold their own against the competition of pushing rivals. The rising generation is always knocking at the door. But the decaying business is not obliterated suddenly ; for years it may maintain a position, because the effects of the old management may survive in its organization, or because its past prestige may have left a tradition which advertises it, or because of the persistence of the habits which some people have formed of buying from it.

In connexion with the growth of businesses the observation may be recorded that businesses are not equally elastic in all industries. It would be as well to draw a distinction between the "walled industries," namely those carried on in factories, and the "un-walled industries," like building. Businesses in the former class are like shell-fish which, in order to assume ampler proportions, beyond a certain limit, must discard their shells and grow others. The "walled" business may have at one time too much space and excessive provision for motive power, to allow for possible expansion ; while at a later stage in its history it may be cramped and inadequately supplied with power, though not so awkwardly situated that it would pay it to embark on extensions. Hence, in businesses in the walled industries, marginal costs are seldom in the neighbourhood of price, though it is still true and relevant to say that in the exaggerated long run they tend to be.

Specialization of businesses.—In previous paragraphs

we have traced the way in which a business finds increasing possibilities of using machinery and specializing its factors as it grows. Now we have to observe that, as an industry grows, its constituent businesses may specialize in respect of the work they undertake, and that in doing so they may find yet further possibilities of using machinery and specializing their factors.

Suppose the whole of the industry is in one place. Then, as the market for the industry enlarges, increased output must be got through the emergence, at any rate after a time, of new businesses. But will not the new and old firms be as much alike as Tweedledum and Tweedledee, the new firms introducing no fresh economies? The answer is in the negative, at least as regards the bulk of the industrial world. Businesses will probably begin to specialize, and specialized businesses eventually reap the advantages of more specialized management, more specialized labour, more specialized machinery, and more machinery per head. Its economies will probably induce the adoption of as much specialization of businesses as there is scope for, provided that certain considerations connected with marketing do not prevent it. The scope for specialization is furnished by the size of the industry, just as scope for specialization among the factors of a business is furnished, other things being equal, by the size of the business. But in some industries, like agriculture, natural conditions may limit the possibilities of specialization; and, in other cases, its economies may be counteracted, as for instance when the cost of material is raised by an increased demand, or when the larger industry has to draw upon inferior agents.

That the more specialized business means more specialized management is self-evident. To demonstrate that it means also more specialized labour, take for example a firm with 1000 hands which used to make motor cars and bicycles.

Say 500 hands worked mainly at motor cars and 500 hands at bicycles; and that after a time the business confines itself to manufacturing motor cars. Then the employer could manage at least 1000 men under the new conditions since he managed 1000 under the old conditions. In fact under the new conditions he might manage more because his task might present less variety; but let him have, nevertheless, only 1000 men. Now it is evident that there can be more division of labour among people constructing motor cars when they work in groups of 1000 than when they work in groups of 500, and clearly their machinery can be more specialized. And in the former case, since scope is afforded for fresh machinery when scope is afforded for more division of labour, more instrumental capital per head of the operatives employed will be drafted into motor-car manufacturing.

Nor have we yet completed our enumeration of the economies that may result from the expansion of an industry: for it may cause specialization, not only within the industry, but also in subsidiary industries, such as machine-making, for which the industry in question is the market; and it may bring about a fall in the cost of carriage.

The specializing of businesses has been going on apace. Compare the engineering works of Boulton & Watt, when James Watt the inventor was a partner—a business typical of its time—with engineering works of to-day. Boulton & Watt manufactured almost everything that is made of the baser metals; to-day an engineering firm may produce nothing but boilers, or textile machinery, or locomotives, or machine tools. Go back three-quarters of a century and you find the cotton factory which spun many kinds of yarn, and made it up into numerous sorts of fabrics, the typical factory in the cotton industry. To-day you will find, to take one example, a mill devoted to nothing but spinning, and spinning only a certain narrow range of yarns. There is prodigious scope for special-

ization among industrial firms: but in agriculture the scope is restricted for obvious reasons.

In the argument above it is supposed that the whole of an industry is in one place. Now suppose it is scattered, parts being in one country and parts in other countries. Still, the business specialization would remain which was dependent upon the aggregate size of the industry. *So the size of the industry abroad, as well as at home, may determine business specialization.* But when the industry was scattered, there would be much less business specialization than when it was concentrated in one place, because of the cost of carriage between places far apart and the inconvenience of arranging for sales to and purchases from distant markets.

The time-worn, but still undisputed, economic dictum that *division of labour is limited by the extent of the market* merely affirms indirectly that specialization (division of labour broadly interpreted) is limited by the extent of an industry; but it is less equivocal, though less direct, than the latter statement, inasmuch as the market must be understood to embrace the foreign market as well as the home market.

Two kinds of specialization may be contrasted, namely, that by product and that by process. By *specialization by product*, a limitation of the classes of things turned out by a business is meant; and, by *specialization by process*, a limitation of the number of processes, in a chain of manufacturing processes, which a business undertakes. If in the worsted industry a business which turned out twenty kinds of cloth gives up producing five of them and supplies only fifteen kinds, we may say that it has specialized by product. Again, in the worsted industry we may distinguish between the processes of (a) wool-combing, (b) spinning, and (c) weaving. If we find a worsted industry each business of which, as a rule, spins the yarns that it wants for weaving and combs all the wool that it wants for spinning, we may

say there is no specialization by process. But when we find a worsted industry, some businesses of which comb only, while other businesses spin only and yet others weave only, we may say there is process specialization. The conditions of specialization by process will be explained on pages 129-30.

Internal and external economies and the localization of industries.—There is a generally recognized distinction between the internal and the external economies of a business. The *external economies* are those in which all businesses in an industry can share, such as the degree of business specialism objectively possible, the conveniences offered by subsidiary industries and facilities for marketing and carriage. The *internal economies* of a business are those economies which are peculiar to it. The external economies of an industry in any one place become greater, as has already been insisted more than once, (a) with the growth of the industry in that place, and (b), under certain conditions, with growth of the industry in other places with which the place in question is in trading contact. That is to say, the external economies of a business are partly local and partly international: and it is of no small interest to observe that recent progress has tended to reduce the proportion of external economies which are narrowly local. Specialization by process becomes possible among factories scattered over a wide area when transportation facilities become cheap and adequate; and there are other conditions of late development which are extending the area within which certain external economies can be enjoyed.

The question of the *localization of industries* is a gigantic one, but we can only afford time for a hasty glance at it.

(a) The localization of industries is determined partly by physical conditions. Coal-mining can only be carried on where there are coal mines. Iron-smelting is done cheapest in the vicinity of ore and coking coal. And the climate of some places is an aid to certain industries.

(b) It is determined partly by means of transportation. Importing and exporting industries gain from being near ports. And all industries which serve a wide area gain from being on a line of railway.

(c) The localization of industries has also been determined in part by the whole complex of economic conditions, including commercial conditions, supplies of labour, and international exchange.

CHAPTER XI.

THE LAWS OF INCREASING AND DECREASING RETURNS.

WE are now sufficiently prepared to understand the celebrated laws of increasing and decreasing returns. Though the next chapter has an important bearing upon them, we shall anticipate and treat of them at once while the contents of the two previous chapters are fresh in the reader's mind.

Meaning of increasing, decreasing, and constant returns.—Increasing, decreasing, and constant returns refer to the additions made to returns, or output, by adding to the quantity of a factor in production, or a group of factors. There is said to be increasing, decreasing, or constant returns, according as these marginal returns rise, fall, or remain unchanged.

It is important to notice, however, that when an *industry as a whole* is said to be subject to increasing, decreasing, or constant returns, as the case may be, the returns usually intended are not the total additions made to the output by the industry's expansion, but the returns having a bearing on the settlement of price, which are *the returns at the margin of particular businesses or in a new marginal business*, as we have yet to learn. The reason for this special reference is that it is convenient to bring the conception of increasing, decreasing, and constant returns into relation with price determination; and the returns governing price need not be the same as the full extra returns resulting from the ex-

pansion of an industry. Thus, in agriculture a rise of the output per unit of expenditure, as more is spent, is perfectly consistent with a fall in the return per unit of expenditure at the margin of cultivation (the amount of which return governs price, as we shall perceive later). This is so because the extension of agriculture might so cheapen agricultural implements and seeds as to lower the average cost per unit of output; though at the margin these cheapening influences might be more than counteracted, through the inferiority of the new land brought under cultivation in consequence of the expansion of the industry. A simple numerical illustration will make this somewhat difficult point clearer. Suppose in a wheat-growing area a new farm is started on which £1000 a year is expended, while the same sums as before are expended annually on the other farms. Let the return on this new marginal farm be 500 quarters of wheat. Then the return per £10 spent is 5 quarters, and the marginal return on the farm cannot be more than this. But the total increased return from the whole wheat area may be more than 500 quarters. For, in addition to the return from the new farm, there may be larger returns from the old farms, since improvements in external economies (p. 104)—such as cheaper agricultural machinery for instance—might result from the supposed extension of farming. Let there be such extra returns from all the old farms taken together to the amount of 300 quarters. Then the aggregate additional returns from the whole wheat area would be 800 quarters, namely 500 on the new farm and 300 extra from the old farms. And as the additional expenditure on the wheat-growing is only £1000 per annum, this means a marginal return for the area as a whole of 8 quarters per £10 of extra outlay.

The meaning of increasing, decreasing, and constant returns, broadly indicated here, will be more apparent after the chapters on supply prices and rent have been studied; but

they will probably be clear enough now to convey the general idea that is needed for an understanding of the laws associated with these terms. As regards the application of these terms to whole industries, it will be realized after the foregoing discussion that we may say if we like, and find it the easiest definition to give, that *an industry is subject to increasing returns if the price of its product falls with the industry's expansion, to decreasing returns if the price rises, and to constant returns if the price does not alter.*

Finally, it remains to note that when the reference is to an industry as a whole, or a business as a whole, it is not assumed that an employer is necessarily able to obtain under the new conditions as large a supply of each agent in production as he would like to have at the old price. Take as an extreme case farming in a country in which all the land is already used, and suppose that the land grows only wheat, that the demand for wheat rises, and that none can be got from abroad. Farmers would like to get more land, but they would be unable to do so. They would, however, raise more wheat from the existing land by applying more capital and labour to it; and it would be said that there was decreasing returns, because, on every farm that was worked more intensively, the return in wheat per unit of cost at the margin would be less under the new conditions than under the old, as we shall learn.

The non-evolutionary laws of increasing and decreasing returns.—The term *law* in connexion with increasing, decreasing, or constant returns, as the case may be, has been employed in more senses than one. It is not at all uncommon to use the term without intending anything more than the mere conception of increasing, decreasing, or constant returns; for instance, to say that an industry is subject to the law of increasing returns without meaning more than that it is subject to increasing returns or that increasing returns rule in it.

But, as contrasted with this use, it is at least as common to find the term "law" united with "increasing returns" or "decreasing returns" to denote the conditions under which industries are subject to increasing and decreasing returns respectively; so that the law of decreasing returns, for example, would state that under such and such circumstances decreasing returns would rule in industries. Even when taken in this latter sense, however, there is an absence of agreement about the enunciation of these laws. This absence of agreement seems to turn in the main upon whether the intention is to indicate the conditions of universal tendencies, or to indicate what is generally found to happen in different classes of industries; and, in addition, as regards the law of increasing returns, upon whether the intention is to indicate what happens as a rule now or what happens as we pass from one period to another. Consequently we shall cover most views of these laws if we recognize five, namely the abstract and realistic laws of increasing and decreasing returns that are not evolutionary, and the evolutionary law of increasing returns. These five laws it now remains to enunciate.

Abstractly the *law of increasing returns* may generally be phrased as follows:—

The expansion of an industry, provided that there is no dearth of suitable agents in production, tends to be accompanied, other things being equal, by increasing returns.

The kernel of the proof of this law has been furnished already in the two chapters immediately preceding this one. As the industry gets bigger more specialization and more machinery per head tend to be introduced into it and its subsidiary industries, and the means of transportation connected with the industry tend to get more economical. Also the commercial work interlaced with the industry tends to get more economical, as we shall see. Consequently, increasing returns tend to follow. And in the defined circumstances,

there cannot be any positive counteracting tendencies, because we have supposed that there is no shortage of suitable agents in production. If there were such a shortage, and it was not very serious, there might still be increasing returns, but there might not. As it is practically certain that some of these tendencies to a lower real cost of production would have scope and be effective, we should be perfectly safe in affirming that the expansion of an industry, under the stated conditions, would be invariably accompanied by increasing returns.

Abstractly the *law of decreasing returns* may generally be expressed thus :—

The expansion of an industry, provided that additional supplies of some agent in production which is essential cannot be obtained, is invariably accompanied, at once or eventually, by decreasing returns, other things being equal.

The proof of this is simple. Let all the factors in production but one essential factor increase and note the result. Suppose the quantity of instrumental capital is fixed and labour and material increase. Labour can become more specialized as its quantity is augmented, but the gain secured through this specialization must ultimately be counteracted because each operative will be progressively deprived of mechanical aids. The case of the more intensive working of a fixed quantity of land is evidently similar. Of course, decreasing returns might also appear when additional supplies of all the agents in production could be obtained, provided that the available extra supplies of some essential agent became increasingly inferior in quality or limited in quantity.

When the law of increasing returns and the law of decreasing returns are understood more realistically, the former is taken to assert that *the expansion of a manufacturing industry leads generally to increasing returns*, and the latter to assert that *the expansion of an industry engaged in obtaining natural products leads generally to decreasing returns*.

So expressed, these laws may be regarded as founded on an inductive examination of actual productive activities made in the light of the abstract truths which have already been enunciated. The tendency for decreasing returns to rule over our efforts to raise natural products is due to the fact that a prominent part in their creation is played by nature, and that the best and most favourably situated land and mines and fisheries are limited in quantity (see Chap. XXVI.).

The evolutionary law of increasing returns.—The evolutionary law of increasing returns results from induction applied historically; and it may be supported deductively with the aid of theories of progress. It states that increasing returns are obtained from manufacture over long periods of time apart from enlargements of the market, and that the tendencies to decreasing returns in the yield of natural products are likely to be substantially counteracted. The cause is invention and increased knowledge.

Diagrammatic representation of the counteraction of diminishing returns.—In fig. 6 measure “doses of labour and capital” along OX. A “dose of labour and capital” means a sum of money

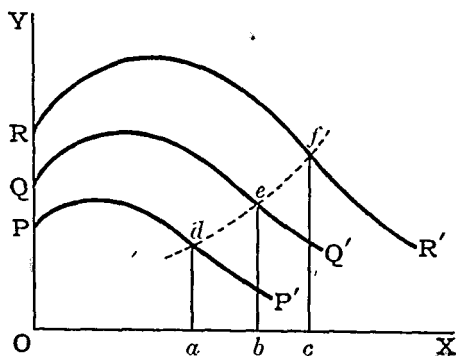


FIG. 6.

spent on different productive agents to the best purpose. Suppose that the money value of each class of agents in production remains constant, so that a dose of labour and capital means a fixed quantity

of generalized producing power as one might say. Measure returns in wheat along OY. For some country, express by the various vertical distances of curves above OX (in short by their ordinates) what, at different times, marginal returns would have been if the various numbers of doses of labour and capital indicated along OX had been applied to agriculture. Thus, if Oa doses of labour and capital had been applied at the time to which PP' relates, the marginal return would have been *ad*. "Marginal return" is to be understood here as the return per unit of cost on the marginal farm or as the marginal return on any typical farm. Let

PP' be the curve of return at the end of the 17th century.

QQ' " " " " " 18th "

RR' " " " " " 19th "

We suppose that the curve of a later century lies above that for an earlier century, owing to improvements in agriculture.

Let the doses of labour and capital applied in the first period be Oa, in the second Ob, and in the third Oc. Then, as the marginal returns (*ad* in the first period, *ac* in the second, and *cf* in the third) rise over the centuries (as shown by the dotted line), there have been increasing returns from an evolutionary point of view. Nevertheless, wheat production has been subject to decreasing returns in each period. The descent of each of the curves PP', QQ', and RR' indicates the rate of decreasing returns in each period.

CHAPTER XII.

MARKETS AND COMMERCIAL FUNCTIONS.

What are markets?—In a complete subsistence economy where each family produces for itself absolutely everything that it needs—to discover which, if it ever existed, we must go back to the Stone-age and the cave man—no exchanging takes place. But, actually, wherever there is a community, however primitive, there is some bartering. With the introduction of more and more division of labour, the volume of this bartering grows. Economic progress means *inter alia* specialization, and not merely specialization by product but also specialization by process (see pp. 103-4); and it is of importance to notice not only that each step in specialization by product magnifies the place of marketing in the social economy, but also that each step in specialization by process creates the need for the marketing of commodities which were not previously bought and sold. If farmers ground up all their wheat there would be no market for wheat. But when specialization by process appears and one man is farmer only and just grows wheat, while another man is miller and flour-dealer, the former will want to sell some wheat and the latter to buy it. Hence wheat will become an article of commerce and a wheat market will be established.

And what precisely is a market? Economically interpreted, the term “market” refers, not to a place, but to a commodity, or commodities, and buyers and sellers of the same who are in direct competition with one another. Hence, we may as

appropriately speak of *world-markets* as of local markets. There is a world-market for tea, since most nations are competing with one another in the purchase of tea. Further, dealers are not brought into direct competition with one another unless they are dealing within the *same range of quantities*. The village grocer is not directly in competition as a buyer with any wholesale buyer of tea; he directly competes with other retailers in buying from wholesale tea dealers. So we may distinguish also between *wholesale markets* and *retail markets*.

Evolution of markets.—There are various stages in the evolution of markets, the significance of each of which is well worthy of consideration. The chief of these are:—

- (a) The localization of markets.
- (b) Dealing by sample.
- (c) Dealing by grade.
- (d) Differentiation of markets.

(a) *The localization of markets* saves much of the time which used to be spent by buyers and sellers in moving about to meet one another. For the localized market there is usually a *market-place*, where goods are displayed, if the market is of a simple kind. When buyers and sellers are crowded together in one place, competition between them is naturally rendered much more effectual than it can possibly be when they are scattered and have to travel about to bargain with one another. So, in the localized market, *one price at one time for one commodity* is likely to rule. A large district may maintain several localized markets of the same kind. In each there is competition, and between them there is also competition. In a sense, therefore, they make up one market. A producer will send his goods to market B, which is further away, rather than to A, which is nearer, if he learns that prices have been ruling so much higher in the more distant market that it is worth his while. The area normally served by a localized market is

dependent, of course, upon the provision of transportation facilities.

(b) The system of *selling by sample* contributes substantially to public convenience. It saves the carriage of bulky goods to the market. Also, it enables more persons to deal on the market; for the market in which samples only are inspected is not cumbered with loads of goods. Further, it enables dealers to get into closer and more continuous contact with one another. Hence the market in which samples are substituted for the actual goods for sale draws on a wider area of supply, and competition within it becomes more thoroughgoing in its action.

All goods cannot in the nature of things be sold by sample. But many natural products can be so sold. Handfuls of wheat taken indiscriminately from the year's harvest of lands of the same quality, in the same district, sown with the same seed, are likely to be the same. Again, things produced in the same mechanical way from the same materials—say pigs of iron from the same tapping of a blast furnace—are likely to be strikingly similar to one another. And yet again, some things may be satisfactorily sorted into classes specifically with a view to selling by sample.

(c) The adoption of *selling by grade* is a step in the development of certain markets which may have the most far-reaching consequences. Organized dealing in "futures" may be the goal eventually reached. For selling by grade, the various qualities of the gradable commodity are arranged in separate classes, to each of which is given a distinguishing mark or name. Sellers usually try to sort their goods into the same grades, and an attempt is made to keep these grades the same continuously over a lengthy period. When grading has been effected, a buyer can purchase without seeing samples, by simply referring to the name or mark of the grade which he wants. The introduction of dealing by grade yet further

enlarges and perfects a market, for the same reason that the introduction of buying by sample enlarges and perfects a market.

(d) The original market is the mixed market. As the area which a market can serve extends, with improvement in the means of carriage and communication, it first grows in size, and then, under pressure of the claims of commerce, begins to *differentiate*, that is, to split into sections—into the fruit and vegetable market, the cattle market, the textile market, the hardware market, the colonial produce market, and so on. Additional differentiation accompanies the emergence of selling by sample and grade, for reasons which will become palpable as we proceed.

Future dealings.—On the markets for some things which are highly gradable—for instance on the exchanges for wheat, coffee, copper, coal, tea, oils, rubber, and numerous other commodities which are in the raw state or near the raw state—future dealing has been so elaborately systematized that the buying and selling of future supplies has been rendered almost as simple as the buying and selling of present supplies. The things which are directly bought and sold on the exchanges where future dealing has been thus promoted are documentary guarantees to deliver certain quantities of the commodity in question at certain times. By means of these tangible tokens, the future supply is brought representatively on to the market. Just as a trader can purchase bills payable at sight, or bills payable after six months or so, and in this way can buy gold for delivery now or in the future, so he can purchase a contract for immediate, or future, delivery of cotton, or wheat, or certain other commodities. There is this difference, however, that the purchaser of a produce future cannot be sure of the exact quality of the commodity which will be delivered against it. Consequently the chances are that he will ultimately sell his future back instead of taking delivery of the article.

The term "futures" is sometimes reserved for contracts for future delivery which circulate on a highly developed produce exchange. Hereafter the term will be used in this restricted way. Other contracts relating to the future will be indicated descriptively, or by such terms as "future transactions," "future business," "future dealings". "Futures" is sometimes used as a generic term to denote "options" also. An option is a right to conclude a bargain on a future date at a fixed price. It may be single, a "put" or a "call" (i.e., a power to sell or to buy), or double, containing both powers.

The advantages of transactions in futures are said to be two: (a) that they steady prices; and (b) that they enable the persons who use, or deal in, the articles in which there are futures to avoid certain risks. Whether such advantages are derived from the use of futures or not, we shall consider later in this chapter.

Technicalities of dealings in futures.—In order to limit the variety of the contracts entered into on a highly organized future market, every "future," which has reference really to a range of qualities of a commodity, is made to relate directly to one of the qualities, or grades, only. But certain other grades are declared to be deliverable against any future, on payment of allowances to or by the purchaser, according to the inferiority or superiority, as the case might be, of the grade delivered to the grade which is the basis of the future contract. Allowances are settled on some agreed principle. Again, with the same object in view, that is with the object of curtailing the variety of future contracts, they are made to refer on the same market to a limited number of agreed periods. On a produce exchange, for instance, in January you might find January futures, February futures, March futures, and so on; and all futures for a stated month would contain exactly the same provisions as regards the time and notification of delivery. It will be at once evident that on a highly organized future market elaborate regulations must be observed. The object of most of these regulations is to simplify business by substituting uniformity of method for variety.

There are two classes of buyers of futures. There are those who buy with a view to their future needs for particular grades of the commodity. When a buyer of this class has purchased a future there is no guarantee that the particular grade required by him will be delivered against it. It is best for him, therefore, if he has bought a June future, to receive some time in June the value of the future, that is the value of what would be delivered against it, instead of the commodity that would be delivered against it, which might or might not be what he wanted. The money could be used to purchase the exact grade of the commodity that he wanted. The alternative would be to take delivery of the commodity, which would probably be of the wrong grade for his requirements, and then sell it with a view to purchasing what he wanted. It should be added, however, that on some markets a future contract has come into use which guarantees delivery of a specified grade recognized in the classification of the market; but even this does not fully meet the requirements of the buyer who wants a precise quality that is part only of a quoted grade.

There are other buyers who are not seeking the produce to which futures refer but are trying to make a profit out of buying at a low price and selling at a high price. If they took delivery they would have to sell what they received. It is, therefore, a convenience to everybody concerned that they should directly receive, in place of the commodity, what it would fetch.

On highly developed markets—future markets and the Stock Exchange—a system of *periodic settlements* has appeared and with it dealing in *differences*. The latter can be explained best by means of an example. If Jones buys from Smith an amount of May futures in some commodity, he has only to pay Smith periodically any sums by which the value of the futures may have fallen between settlement days. Similarly, Jones receives from Smith any sums by which the futures rise. If the futures were bought on 1 January for £1000 and settlement days fell on 11, 25 January, 8 February, and so on fortnightly, and the futures were worth, according to market quotations, £1100, £1200, and £1150 on these dates in order, then Smith would have to pay Jones £100 on 11 January, and £100 on 25 January, and Jones would have to pay Smith £50 on 8 February. If the futures were cancelled on 8

February, Jones would have received £150 on balance, which is just the difference between the value of the futures when he bought (£1000) and their value when he withdrew (£1150). As dealing on *differences* enables people to enter into large transactions if they have enough capital to cover possible adverse differences, it has increased the volume of dealing, including speculative dealing. The system of periodic settlements performs the important service of periodically testing the solvency of the market and removing those who are not in a position to meet their liabilities.

Markets for capital.—To complete our condensed account of markets, something must be said of markets for capital. We may distinguish between the market for capital already invested and the market for new capital. The bulk of the former is embraced by stock exchanges. A typical stock exchange is perhaps the most highly organized of the markets of the world. It is so highly organized because the things bought and sold on stock exchanges, that is shares, are perfectly graded, so to speak. No produce can be quite perfectly graded. But shares may be regarded as perfectly graded, because the several units of a stock of a given kind are in effect identical: any one ordinary share of a given company is just as good as any other ordinary share of the same company.

The market for capital for fresh enterprises is curiously unorganized. The stock exchange is not the market for such capital; it is, on the contrary, the market in which invested capital is bought and sold. Through operations on the stock exchange the ownership of invested capital changes hands, but the quantity of invested capital is not thereby altered though its value may be affected.

Capital is directed to new investments through private information, advertisement, the circulation of prospectuses, financiers, and investing companies. The degree in which banks sink their money in industrial undertakings is limited, as we shall observe later, because they may require their

money back again at short notice and it is not easy at short notice to sell an interest in a newly projected railway, say, without risk of loss. In some countries banks do more in the way of directly financing *industry* than in others. In all countries they largely finance *commerce*—and so industry indirectly—by discounting bills and in other ways. In most countries, investing companies are not responsible for much of the fresh investment in industry which goes on from year to year. They have absorbed far more of this work in the United States than elsewhere.

Price steadiness and its effects.—Before trying to answer the question, Does speculation steady prices? we must dispose of two preliminary questions, namely, (1) What is meant by price steadiness? and (2) In what does the value of price steadiness consist, if it has any value?

If the price of one commodity changes less frequently than the price of another, we may say that the price of the former is steadier than that of the latter, other things being equal. Again, if the price of one commodity varies by smaller percentages than the price of another, we may say that the price of the former is steadier than that of the latter, other things being equal. What shall we say, however, if the price of one thing varies less frequently but more violently than the price of another thing? In view of these and other differences in character between price variations, some sort of measurement of steadiness, which attaches an appropriate weight to each of them, must be used. A simple or complex average of variations from the mean price is usually employed.

Are steady prices (it being assumed that the purchasing power of money remains constant) preferable to unsteady prices? In facing this question, we can avoid the perplexities arising from the vague implication of the word “unsteady,” by contrasting absolutely unvarying prices with prices that vary in any way whatever but yield the same average. Such a con-

trust is sufficient for our present purpose. We are dealing not with price variations over periods of years, which may involve substantial alterations of supply, but with market fluctuations from day to day, week to week, and month to month.

After a few minutes' thought it will become abundantly apparent to the shrewd observer that unvarying prices (when the purchasing power of money remains constant) must be best for the community. Take, as a tangible case to generalize from, the price of some consumer's commodity. Unvarying price results, under the condition defined above parenthetically, when the supplies of this commodity are distributed in time proportionately to demand. And such a distribution produces a maximizing of the satisfaction which can be yielded by the commodity, other things being equal, because it produces equi-marginal returns in time. The reader who is still in doubt may refer back to pages 44-6. Fitful price movements enforce irregularity in consumption, which is wasteful of satisfaction. And, so far as they relate to the things needed for production, they are passed on to the prices of consumers' goods, and have the further disadvantage of interrupting the course of production.

Does speculation steady prices?—It is arguable deductively, but only on certain assumptions, that speculation steadies prices, whatever plausible measure of steadiness be taken. The proof runs as follows. A developed market is constituted of experts, of men who devote themselves to studying the foreshadowings of supply and the signs of change in demand. When an expert thinks price is going to rise he buys at once for future use; and, as a result of his action, price does not rise so much in the future as it would have done otherwise, provided that the expert was right in his anticipation. When the expert thinks price is going to fall he limits his purchases as much as possible—that is to say, he holds up as much present demand for the future as he can—

and, as a result of his action, price does not fall so much in the future as it would have done otherwise, provided that the expert was right in his forecast. Now, the expert bases his decisions upon a study of the facts of demand and supply, after a long acquaintance with the facts. Consequently, he will more frequently be right than wrong, if he is a man of judgment. If he is not a man of judgment, and is more frequently wrong than right, he will dissipate his resources in time, and voluntarily leave the market ultimately, or be driven from it by his losses. Hence, through a survival of the fittest, the majority of the experts on the market are likely to be men of judgment who study the market and are more frequently right than wrong. Hence their dealings tend to reduce the range of price variations and to reduce the average variation from the mean price.

This deductive proof that speculation (which is aided, be it remembered, by futures on produce exchanges) tends to steady prices rests on two assumptions. The one assumption is that the dealers are experts with knowledge of market conditions. The other is that they do not *tamper* with the market.

By "tampering with the market" is meant dealing with the deliberate intention of altering the level of prices for one's personal profit. The man who makes a great demonstration of selling so as to depress prices, in order that he may buy cheap ultimately, is tampering with the market. The man who "corners" a commodity, that is gets a dominant control over supply, so that by withholding his supply he can force up price, is tampering with the market. Tampering with the market unsteadies prices; the speculator who tampers with the market aims at altering prices to benefit himself. Now it is known that the market is tampered with from time to time. And it is conceivable that this tampering may tend to unsteady prices more than other business in futures tends.

to steady them. I should conjecture, however, that under present conditions the steadying influences preponderate. Nevertheless, there appears to be no doubt that tampering with the market is commoner than it used to be. The cause is said to be the large scale organization of financiering which the past few years have witnessed, particularly in the United States. When a speculator, whether he is tampering with the market or not, acts in such a way that prices tend to be depressed, he is called, in the expressive slang of the market, a "bear"—a bear tears down with its claws. When his action tends to have the opposite effect he is called a "bull"—it is a matter of common knowledge that a bull tosses with its horns. Sometimes "Longs" and "Shorts" are used for "bulls" and "bears" respectively, because buyers have the produce "coming along" and sellers would be "short of it" after delivering.

The deductive argument which proves that speculation steadies prices depends, not only on the supposition that the market is not tampered with, but also on the supposition that all the dealers are experts. But all the dealers on organized markets are not experts. The general public speculate in produce futures as well as in stocks; and, as the majority of these outside speculators cannot pretend to any expert knowledge, they are not likely to be more frequently right than wrong in their shots at prevision. They are sheer gamblers; and the gambler is just as likely to lose as to win. Moreover, as the outside public are peculiarly sensitive to rumours and are liable to react to extremes and yield to panic, the weight of the influence of the public on the market is now heavily on one side and now heavily on the other side. It is just as likely to make unduly low prices lower as higher; and, if it makes them higher, it is just as likely to make them too high as to bring them to the right level. Speculation by the public is, consequently, a force which should extend the range of price

variations and increase their number. However, it is probable that this disturbing factor on a developed market is of small importance in comparison with the influence of dealing by experts.

Marketing and the risks of anticipating.—Certain of the general ideas implicit in the foregoing may be brought out more fully while some further points of importance are indicated. Commercial functions, broadly conceived, are of two sorts. They consist in :—

- (1) The arranging of purchases and sales.
- (2) The undertaking of the risks incidental to producing in anticipation of demand.

(1) We have already remarked that the first function would be non-existent in a thorough-going subsistence economy. Its purpose is to find the most appropriate buyers for sellers and sellers for buyers. We may think of a market as bounded by producers of an article on the one hand and consumers of it on the other. The producers are, say, Smith, Jones, and Brown, and the consumers are Johnson, Thompson, and Robinson. The product, suppose, is pig iron. Johnson buys from Brown at, may be, 30s. a ton, while Smith is ready to sell at 29s. a ton though Johnson does not know it. The commercial man finds out this useful fact for Johnson, or for himself if he is a dealer and not merely an agent working on commission, and makes a profit out of the knowledge. But the bulk of the gain cannot be reaped by the commercial men, because, as we shall see on pages 150-1, by competing with one another, they are forced to transfer much of it to the community as a whole. So the commercial man insures that the buyer shall buy at the lowest price possible. He also insures that the seller shall sell at the highest price obtainable, since he equally prevents a commodity from selling at 28s. when it could realize 29s. Further, the commercial man creates value by insuring that each buyer shall get the articles produced by the firm which is turning out just that quality

of the article which meets most exactly the buyer's requirements.

(2) The performance of the second function referred to above, namely anticipating, is unavoidable under any conditions. Even cave-men must frame estimates of their needs before they produce, and in framing their estimates they may make mistakes. Robinson Crusoe when alone could not engage in exchanging, but he could not flee the responsibility of anticipating. Recent economic development, however, has meant the shifting of this responsibility from consumers to a large extent, and production now is almost always ahead of the consumers' expressed requirements. In a modern community we expect to find our wants foreseen. This is the age of the "ready-made" article. We may order our suits to measure, but we choose the cloth from stocks already accumulated and paraded for our inspection.

Now guessing, however scientifically, at the future wants of a community is hazardous because change in fashion is not exclusively prescribed by shopkeepers, and incomes have their ups and downs, and the relative quantities demanded of different things depend upon their relative costs which alter from time to time. Upon the distribution of the risks incidental to anticipating demand under various conditions, a ponderous treatise might be penned. Now it must suffice to point out that with progress they have apparently tended increasingly to rest upon specialized commercial men.

Distribution of the risks of anticipating.—Let us take a particular case, by way of illustration, and consider the possible distribution of the risks involved in preparing a country's supply of cotton prints for the summer—remembering that we are tracing possibilities and not attempting to describe the custom of the trade in any particular place.

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We may begin with the wholesale provider in the home trade who does not produce. Such a house has to prepare its stock of prints for

the spring. It may get some guidance as to what will be wanted from the retailers, but most of the retailers will probably stock their shops by choosing from the stocks of the wholesale houses. Now, the manufacturers (that is weaving firms, which, we shall suppose for simplicity, do their own printing) may anticipate themselves to some extent, and the wholesale house may choose from their supplies and order what they want if it has not been produced. In this case, manufacturer and wholesaler share in the venture of prophesying about demand. Or the manufacturer may produce only on the order of the wholesale dealer. In this case, the hazard of anticipating retailers' demand rests exclusively with the wholesale dealer. Generally speaking, it may be said that the latter system tends to be the rule in so far as wholesale dealers stand between manufacturers and retailers.

Nevertheless, in the latter case, the manufacturing business (that is, in our example, the weaving firm which prints) has not been freed from all risks, apart even from those connected with the cost of making up material. There are yet other risks left, namely those created by fluctuations in the price of material, that is, as regards our example, in the price of yarn, assuming that the manufacturer does not spin his own yarn. Now, the weaver would naturally try to shift these back on to the spinner or forward on to the dealer. When the weaver is asked to quote for deliveries of particular cotton fabrics at intervals as they are needed, before quoting, he may try to get, and succeed in getting, quotations from spinners for the yarns that he needs, to be delivered as he needs them, and base his quotations upon these quotations of the spinners. Or the weaver might induce the wholesale dealer to give him the order on the understanding that prices should vary with certain market quotations of yarn ; and then buy yarn as he required it.

The history of the risk may be followed up even beyond the spinner, if any of it is passed back to him. The spinner is speculating if he quotes prices for future deliveries of yarn without knowing what his raw cotton is going to cost him. He might avoid speculating by buying at once all the cotton that he needed to execute the order ; but, if the price of cotton were generally expected to fall, he would be ill-advised to do so. And if he did so, the community would lose, because the price of cotton when it was high would be raised

still higher, and the range of variation in the price of raw cotton would be stretched out. Or, as there are futures in cotton in many cotton markets, the spinner might buy futures in cotton in quantities and for periods to suit his orders for yarn. But to do this would not be to protect himself completely, because the price of futures, as has been explained on pages 117-8, varies with the price of some one grade of cotton which might not be the grade that he wanted. If the grade that he wanted rose in relation to this basis grade, against its special rise in price the spinner would not be insured. So, broadly speaking, we may say that futures provide him with a hedge against a general rise in the price of cotton, but not against a special rise in the price of the exact kind of cotton that he needs. However, the spinner could escape the whole of the risks which we have been analysing, if he could contract with some cotton broker to have delivered to him at stated periods stated quantities of the exact kind of cotton that he desired at a price fixed when the contract was made. In this way, the spinner would shift those of his risks connected with fluctuations in the price of material back on to the broker, as the weaver shifted his corresponding risks on to the spinner. The broker in turn could hedge against the bulk of the risks involved in his contract by buying futures on the cotton market, or entering into some of the numerous future transactions which are there embarked upon. He might even make arrangements with other brokers by which he distributed all or some of the risk associated with the "points on or off," that is the risk that the particular grade of cotton that the spinner wanted might rise more than basis grade rose. We need not proceed further, and trace the element of risk back to the grower of cotton. Of course, when production does not reach back to any market or markets in which futures are used, the shifting of some of the hazard involved in anticipating on to dealers in futures is not feasible; but there are still dealers in the material to be reckoned with and the producers of it. Our particular case might have been rendered more complex by the inclusion of arrangements for export.

In the distribution of the risks involved in anticipating, tendencies to uniformity seem to be operative. But, naturally, in different industries, under different conditions, different arrangements

must be expected to be established. We may, perhaps, venture on two generalizations. The first, already suggested, is that these risks are increasingly settling on specialized commercial men. The second, which is more doubtful, is as follows. On the one hand, the risks of losing through making mistakes in anticipating the needs of consumers tend to be rolled, or shifted in bulk, on to wholesale and retail dealers, since they are more likely to forecast demand correctly than manufacturers. On the other hand, the risks which are run when the future prices of raw material are guessed at (as they are likely to be when finished goods are ordered for delivery far ahead) are probably tending, on the whole, to be shifted back to the initial stage in the productive process, and, if possible, to dealers in the raw material, who are in a more favourable position than those who work up the raw material, or those who deal in the finished product, for forming correct judgments about future demand and supply in relation to it. But, to this second generalization, the exceptions are so numerous that it must be regarded as tentative and as having only a limited field of application.

Differentiation of productive systems.—It will be an aid to our understanding of commercial functions in their relation to industrial ones to make some analysis of a complex productive process and suggest some ways of explaining how and why it separates into different businesses, and, when it does so, how its parts are held together; though we shall be dealing with a group of facts animated by so many conflicting dispositions that it will be almost impossible to find our way to any definite conclusions having a moderate degree of universality.

Let A and B be two industrial processes involved in transforming some material into finished goods—A and B being respectively, for instance, steel-making and boiler-making, or cotton-spinning and cotton-weaving, or timber-sawing and cabinet-making. Let small letters stand for the commercial work of buying and selling, and let brackets mark the boundaries of businesses. Then the following are examples of the types of business organization that are possible :—

- (a, A, B, b)
- (a), (A, B), (b)
- (a), (A, a'), (b' B), (b)
- (a), (A), (a', b'), (B), (b)

plete chain of production to get satisfactory material by purchasing it as by producing it; and (3) that the half-finished article turned out by one of the early processes should be used for many purposes. But the phenomena of industrial and commercial differentiation have been little explored. Integration sometimes takes place where one would expect further differentiation; and one must remember that the possibility of collecting large groups of capital for its enterprises profoundly affects the form which an industry assumes.

Whenever commercial functions tend to separate from the productive system, and be assumed by independent businesses, they do so largely because of the advantages of business specialism. One leading case from which this particular specializing tendency is absent is that in which producers are turning out special products which they dispose of in private markets. By a "private market" is meant a group of customers who buy from a particular firm because they have formed the habit, or think that its goods yield the best value for the price. Articles which sell by the name or mark of their makers are selling in private markets. Most of the habitual buyers of these articles have become prejudiced in their favour and will not be satisfied with substitutes, though the substitutes may be quite as good. Evidently a producer of such articles will not sell through brokers who are selling also for rival producers. On the contrary, he will try, through the agency of his own travellers, to seize and to hold as much of the market as he can. Businesses which have to win their private markets naturally grow slower than others ordinarily, though they may attain ultimately a greater size.

The sales of articles which can be easily classified on inspection are not much affected by the reputations of their makers. A firm producing such articles may, therefore, sell more satisfactorily and more economically through independent agents or dealers than through its own salesmen. It goes without saying that it is much more difficult to create a private market in producers' goods than in consumers' goods, because producers as a rule are more expert, more critical, and more alert to seize an advantage, than the ultimate consumers.

Reactions of commercial organization on industrial organiza-

tion.—A complete scientific analysis of commercial organization should trace its reactions upon industrial organization, but in this treatise only the most condensed summary of these reactions can be offered. Industrial specialization by process, we have already learnt, is dependent upon the possibility of creating satisfactory markets in between industrial processes. The existence of such markets is essential to the preservation of continuity of production, after an industrial process has differentiated into independent businesses. Hence much industrial specialization of businesses, with its vast economies, is dependent upon commercial organization. The separation of industrial functions from commercial functions also brings about larger industrial businesses (with their greater internal division of labour) by enabling the employer to concentrate his attention on his industrial functions. Moreover, it brings about a closer correspondence between capacity and task in business. A producer of blankets for export, say, who had to buy his material and sell his blankets unaided by commercial experts, and carry all the risks of these commercial operations, might fail as a blanket-manufacturer, though he might be ideally efficient in performing the industrial part of his mixed offices. Another blanket-manufacturer whose factory was badly organized and managed might keep his firm going profitably by virtue solely of his talent as a man of commerce. When commercial functions split away from the industrial, the fittest to survive industrially tend to survive as heads of producing businesses, and the fittest to survive commercially tend to secure all the commercial work; and the community in consequence is made much the better off. The reactions of commercial organization on the *form* of industrial organization will be cursorily noticed in the next chapter.

CHAPTER XIII.

TYPES OF PRODUCTIVE ORGANIZATION.

IN a single chapter on so intricate a subject, to deal adequately with which wide experience would be requisite, a few leading reflections must suffice.

Agricultural systems.—In the organization of agriculture the simplest arrangement is for the cultivator to own the land which he cultivates. This plan has its recommendations: “give a man secure tenure of a rock and he will turn it into a garden, give him a nine years’ lease of a garden and he will turn it into a desert”. But the scheme has its drawbacks also: and both recommendations and drawbacks are relative to time, place, and circumstances. While *peasant proprietorship* insures as a rule that assiduous attention shall be paid to the land, it cannot insure that the land shall be treated in an enlightened fashion and with adequate capital. And, when it is not supplemented with some form of co-operation, a deplorable lack of economy in marketing, and in the distribution of the produce, results. Moreover, under peasant proprietorship, there is a danger of excessive division of holdings; while the abler peasants find it impossible to acquire all the land that they could manage, because of its cost to buy outright; and many who are best qualified to cultivate the land may have no chance of getting any at all. Some of these disadvantages of peasant proprietorship may be minimized by associating with it a leasehold system. Further, in its effect on character and social life also, there may be

flaws in small-scale occupying ownership. Peasants with little estates of their own, with all their fine characteristics, are apt to be self-sufficient and parsimonious. The land may be made a fetish and everything may be sacrificed to it—affection, happiness, culture, and leisure. That the magic of property turns sand into gold, does not settle the question from the point of view of humanity.

Metayage is a system intermediate between peasant proprietorship and the leasehold system. Under it farms are united in estates over which rights are exercised by persons whom we shall call landowners, though the land may not be theirs in the sense that they can do just as they like with it. Broadly understood, metayage exists in a variety of forms in many parts of the world, and in some of these forms it shades off into the leasehold system. Where it is found traditionally sanctioned by custom and unaffected by other systems of tenure, the landowner furnishes a portion, if not the whole, of the capital, and the character and extent of the cultivation is generally made a matter of arrangement between him and the cultivator. Though the liberty of the cultivator is restricted, and there may be a fear lest methods of farming should become stereotyped, the enterprise of the cultivator may actually be stimulated, and given opportunities, by a good landowner, whose intelligence will probably be more highly trained than that of the average peasant. As the landowner is a partner, he appropriates some of the produce as his remuneration, his share being some agreed proportion of the whole. It has been objected to metayage that, as the landowner takes a certain proportion of the produce, the cultivator has less inducement to do his best, and, therefore, works the land less intensively. The second ploughing of a field, say, would add 10 bushels of wheat to the produce. If the cultivator received the whole of the ten bushels it might be just worth his while to plough the field a second time. But

if he received only a proportion of the result, say a half, the other half going to the landowner, it would not. This objection might be weighty were details as regards the working of the holding not settled by arrangement between the landowner and the farmer; but that it is not a serious objection practically is evident from the fact that in America, which is not a backward country, it is common for the hiring-charge for land to be a proportion of the harvest. Other things being equal, it is obviously an advantage to have the burden of the payment made to the landlords by the cultivators automatically reduced in bad years, as it is not when farms are leased at a fixed annual charge. Theoretically, under metayage, the size of the farm is readily adapted to the capacity of the cultivator, though actually tenacity of custom has curtailed adaptability in this respect.

The *leaseholder* is left with a freer hand than the *metayer*, but he is seldom permitted to alter the character of his farm, for instance by breaking up pasture, without the consent of his landlord, and is naturally required to keep the state of the property up to a certain level. Whether the greater liberty which the leaseholder enjoys is a gain or a loss from the public point of view, or his own, depends upon the initiative, resourcefulness and knowledge, of the cultivators. Freedom to make endless mistakes and muddle into embarrassments is a doubtful boon. For the attainment of the most fruitful results from the leasehold system, it is essential that the lease should cover a period lengthy enough to make it worth the farmer's while to spend himself and his resources liberally upon the land. Further, arrangements for compensation for unexhausted improvements, that are equitable both to tenants and landowners, are almost equally essential to prevent the waste of time, land, and capital, which otherwise is unavoidable when a lease is drawing to a close and the farmer is chary about investing fresh capital in the land and is anxious to

squeeze out of it every atom of value. But, even at its best, the leasehold plan is obviously unsuited to the remote districts of new countries, where farms have to be made out of rough land, unless the lease is an exceedingly long one. A large reward must be offered to persuade the cultivator to endure the toils and discomforts, and face the dangers and solitude of the pioneer.

As regards the size of a farm, nothing need be added to the principles already laid down with reference to businesses generally. The size of a farm depends broadly, and should depend, on the nature of the farming (whether, for instance, it is arable, dairy, or fruit farming, or market gardening), and upon the ability of the cultivator; though the fact that a farm must be equipped with a house and out-buildings limits the degree in which the division of an estate into separate tenancies can be modified, while custom and tradition—markedly in old countries—limit it as well.

Private businesses and companies.—Among types of business management the firmest lines of demarcation separate private businesses, including partnerships, from the companies which are controlled by elected boards of directors. But all companies are not essentially of the latter class. A business may be dominated by one man, or two or three men, though it has been clothed in the dress of a company in order to dissociate the owner's private property outside the business from liability in respect of business debts, provide for distribution of profits among persons who are not active in the business but have an interest in it, or get fresh capital easily, or for other reasons.

The peculiar merits of the organization of production in private businesses are (1) that the man at the head of each business is continuously incited by his self-interest to secure efficiency and economy; and (2) that any man who can find the capital can start any business that he likes and, conse-

quently, that new men keep pushing into the arena where the fittest (in a business sense) survive. These are substantial recommendations, only it happens that the second is strictly qualified in industries for a start in which the possession of much capital is requisite, as few who would like to initiate a business are wealthy enough, and, of those who are, only a small proportion care to put so many eggs into one basket. Moreover, fitness to survive, in the business sense intended above, may unfortunately comprise a number of anti-social qualities.

In the public company, deliberate selection largely takes the place of the kind of selection just described; and the choice of leaders must frequently be made on more or less slender evidence so that at the best it is a leap in the twilight. But is not the selection which takes place in a régime of private businesses equally a leap in the twilight? We must grant that it is, but those who leap choose themselves; and many choose themselves so that selection goes on continuously. A man thinks he has it in him to be an entrepreneur and he takes his chance. He may be right, and he might never have been singled out for the position by his fellows; or he may be wrong, in which case his personal losses force him to dismiss himself. But the fact that he has the imagination and independence of mind to be ambitious, faith in his powers of succeeding, the perseverance to force his way, and the courage to face the inevitable risks when he is prepared to take the final step, is the best augury possible that he is endowed with the right qualities for filling satisfactorily the position to which he aspires. Nevertheless, there is much to be said in favour of the public company. It can rapidly get control of a capital which is beyond the reach of most men in business on their own account; and control over capital is a matter of predominant importance in certain trades. It may be conjectured, therefore, that public companies in these

trades might be more enterprising and more efficient than private firms. Again, for risky businesses, it may be easiest to get capital from many people in small sums. Moreover, the public company can enlist at a moderate cost the aid of the best information and business judgment by electing upon its board of directors the men whose advice it would like to have. Mistakes will be made; but for two directors who may be useless one may be of immense value. It may be true that the most successful employers in a particular trade cannot ordinarily be brought into a company which competes or intends to compete with them, but different sorts of business are strikingly similar in their broad underlying characteristics.

It is notable that the policy of the public company, by reason of its constitution, may be different in type from that of the private business or private company. The salaried manager must frequently compromise more than the private employer because of the over-ruling judgment of his directors; and the directors, too, must compromise when they differ among themselves. Policy has to be justified in the public company. There are advantages in this; rashness gets nipped in the bud. But there are disadvantages also: there is divided responsibility; and a man who has acquired a wonderful instinct of sound and original judgment may, nevertheless, prove incapable of analysing the reasons which led him to his conclusions, or of persuading others to share them.

Under modern conditions, private businesses and public companies seem to have their respective spheres. When a moderate capital is adequate and constant attention to changing detail is vital, when customers have to be won and are easily lost and changing fashions have to be met, the private business is likely to be the most efficient, for one reason, if for no other, that prompt decisions are necessary and management cannot be reduced to rule. But when great economies

can be reaped by large scale organization, or when management can be systematized, and urgency does not commonly prevent resolutions from being taken at leisure, the company organization is likely to achieve its best results, both absolutely and relatively to those achieved by private businesses. One plausible generalization would seem to be that, other things being equal, an industry which is flanked by developed markets is more suitable for company organization than one which is not, because in the former commercial risks (see pp. 124-8) may be avoided. Such are the mutations in every productive field, that at one time in an industry the company may gain ground, and at another time the private business.

Finally, two points require noting. The first is that it is one thing for a company to take over a thriving concern, which may make its profits out of an unvacillating private market, and another thing for a company to create a business. The second is that the company and the private business may be equally efficient in a given set of circumstances. The one triumphs in one way and the other in another way.

Co-operation.—Broadly speaking, co-operation partakes of the company type of organization, but it has peculiar features of its own. Of co-operation there are many kinds. The title "*distributive co-operation*" is reserved for the co-operation which begins with an association of consumers. It relates primarily to the retailing of goods, but it has been extended backwards to production. After payment of all expenses (including interest on capital, which is remunerated at a fixed rate, and the cost of any social activities), the common principle is to divide the remainder, that is profits, among members in proportion to their purchases from the stores, a trifling charge being made for membership. Where distributive co-operation is highly developed, wholesale co-operative societies have been established which bear to the retail stores the same relations as the latter bear to their

members. The retail stores are members of the wholesale, and draw from its profits shares which are proportional to their purchases from it. Wholesale societies purchase in the open market and also produce for themselves in their own factories some of the articles which they sell. Their production is not, however, to be called "productive co-operation," as that term is conventionally attached to a type of co-operation which has yet to be sketched. But the principle of productive co-operation, with modifications, is applicable to these productive shops of the wholesale societies. It is applicable also to the work of distributing goods; and actually a portion of the profits made by some stores are divided among their employees. Needless to say, profit-sharing may be, and has been, introduced into businesses other than co-operative (see p. 349).

In the competitive struggle a co-operative store holds a strong position, because its membership furnishes it with a means of gauging the extent of its market over and above those at the disposal of a private shop, and also because the bulk of its market is a private one, as we have expressed it (see p. 130). Moreover, its members are anxious to do what they can to further the interests of the store, either for the sake of magnifying the profits in which they share or for general social reasons. Many co-operators will buy from their stores articles which are not exactly of the kind that they want rather than go elsewhere; and, in some places, where co-operation is very powerful and the members of a store take great pride in it (and perhaps regard it as embodying an important social movement), the store actually sets the fashion. So a co-operative store largely escapes those losses which are incurred by private shops when customers' needs have been incorrectly anticipated.

An obvious criticism of distributive co-operation is that, in the degree in which it relies upon the circumstances

favourable to its prosperity enumerated above, it tends to encourage inappropriateness in production, to suppress initiative in demand, and to prevent the displacement of the inefficient manager. The co-operator might contend, however, with some reason (1) that much of the variation in demand is purely capricious, and does no good to anybody, and causes waste, and (2) that inappropriate provision to meet the wants of consumers is prevented in so far as the members of a store are a closely knit social group the individuals in which meet together, for business purposes, recreation and social pleasures and duties, and are thus enabled to bring their influence to bear upon the management of the store. Who, it has been pertinently asked, are most likely to understand what their customers really want, private shop-keepers who see their customers only over the counter, or the managers of co-operative stores who associate with their customers at social and educational gatherings?

Distributive co-operation has been recommended as an agency for thrift; any higher prices charged in a co-operative store than in private shops being defended on the ground that the payment of some extra pence on weekly purchases is not felt, while the lump sum received on their withdrawal in the form of dividends is felt. Plainly, however, there is a danger to guard against here. The whole of the extra paid in higher prices may not be returned: some part may be lost in careless management. The principles of distributive co-operation have been partially applied in such businesses as the Army and Navy Stores and the Civil Service Stores in England.

"Productive co-operation" refers strictly to the production undertaken by associated groups of workmen, who may act through an elected committee. It has met with only limited success. Securing capital has been a difficulty; also securing capable managers. And not infrequently the inevitable limita-

tion of the manager's authority has been a serious handicap. However, there are some flourishing co-operative businesses of the productive class. In trades where little capital is needed, and where efficiency depends largely on the application and care of the individual workman (so that in private businesses much supervision is essential), co-operative groups of well-selected men, imbued with the right spirit of mutual help for the accomplishment of a common purpose, may be expected to reap prosperity, and have indeed done so.

"*Labour co-partnership*" means a fusion of some degree of productive co-operation with the ordinary business types. The employees are represented on the board of management and receive a share of the profits. We may express its character by saying that it implies both control-sharing and profit-sharing: a scheme which provides for profit-sharing only is not, properly speaking, labour co-partnership. Labour co-partnership has met with a larger measure of success than complete productive co-operation. Where it has been found advantageous—for instance where a business gains from having an individuality, to retain which it is important that the workmen employed should not be constantly changing and should do their best for the firm—it is said to produce both contentment and an interest in the business which has a high economic value. In very large businesses it is difficult to apply—and these are the concerns where profit-sharing has the least value, particularly when the labour-cost is low,—but in such businesses, it might be applicable, with modifications, departmentally.

People may unite for *the attainment of limited ends by co-operation*. Small producers are placed at a disadvantage in competing with large producers in certain respects in particular, and in these respects they may combine so as to enjoy co-operatively the economies of large-scale operations. Thus, small farmers may own specialized agricultural machinery

jointly, and may buy seeds and manure jointly, and jointly arrange with railway companies for the carriage of their produce. The co-operative dairy also seems to have removed a disability under which the small dairy-farmer was labouring.

Co-operative credit consists in using the credit and resources of a group to meet the needs for capital of members of the group. The pooled credit of a group is naturally much greater than the aggregate of the individual credits in the group, because all become sureties for each; and this holds to some extent even of the cases in which the liability of members is limited. Other advantages of co-operative credit are that providence is encouraged, and that the members of the co-operative groups informally see to it that loans are properly used, or are at once called in, and that bad debts are not contracted. Co-operative credit is provided through agencies known as agricultural banks, people's banks, or popular banks. They are also called Raiffeisen banks (after their founder) in certain agricultural districts in Germany and elsewhere, or Schulze-Delitzsch banks (after their founder) in certain urban districts in Germany; but many of the last have become large joint-stock organizations which retain little of their original character.

Co-operation has been extended even to house-owning. *Co-partnership tenants' societies* are associations through which the occupiers of houses on a given estate own the houses in common. Shares may be paid for in instalments, and if any one desires to leave the estate he can sell his share. The superiority of this arrangement over the ownership of just his own house by an occupier is twofold: that the risk of loss on a group of houses is less proportionally than the risk of loss on a single house, and that the estate may be laid out to suit the tastes of the occupiers.

Classes of monopolies.—Monopolies may be classified into (1) natural, (2) social, (3) legal, and (4) voluntary.

Natural monopolies take their origin from the fact that the sources of some valuable natural products are strictly limited.

Social monopolies arise out of the peculiar position of certain businesses in the social economy. Sometimes there is no room for more than one business, or a very few businesses, to provide a given service. It might not be possible for two railway lines connecting two small places close together to pay; and, even if it were, two lines would be less economical than one line. Competing gas companies, again, cannot be permitted to lay their pipes in the same streets. Frequently the provision of public utilities which must be monopolized in a given district, like the furnishing of gas, is undertaken by public authorities; and, if not, it is usually controlled (pp. 369-70). Among the so-called "social monopolies," we sometimes find the commingling of monopoly and competition, and what is scarcely monopoly but rather a limitation of rivalry in such a degree that competition either is not, or is not likely to be, fully effective. There is competition between rival railways, but competition is not, as a rule, untrammelled in the provision of transportation as it is in the provision of boots.

Legal monopolies are those created by law. Patents and copyrights are the most obvious examples. The justification of these, when they are conferred on inventors and authors, is indicated on page 372. Some social monopolies also enjoy legal support: a railway company, for instance, must usually get authority from the State to build a line, because it may have to acquire some of its land by compulsory purchase, and it might be objected to as a nuisance or danger by certain people.

Voluntary monopolies may arise (a) from the absorption by one business of other businesses, or the economic destruction of rivals, or (b) from the purchase of competing businesses, or from more or less voluntary agreements. The first method

is practically impossible if there are many businesses. Among industrial combinations we may broadly contrast (1) those which leave an appreciable part of the individuality of the combining units untouched, and (2) those which destroy it. Commonly, the former are termed "*kartels*" and the latter "*trusts*".

Trusts and kartels.—The formation of a trust—by which we understand here the complete merging of several businesses in one big business, which, however, may have its constituent works widely scattered—is a colossal task, beside which the establishment of a loose combination to maintain prices is insignificant. For the creation of a trust, therefore, any cut-throat competition caused by bad trade is seldom sufficient. Commonly it is traceable to the expectation of (*a*) big economies from large-scale organization, or (*b*) big profits from the addition of a large volume of capital to that already invested in the industry, or (*c*) a substantial monopoly revenue from the strict regulation of output or discriminative prices. Further, the conditions are not unfavourable for the formation of a trust if the industry is of such a kind that its efficiency is not appreciably impaired by centralized management. Even when the gains aimed at are chiefly derived from the regulation of prices, the trust may be preferred to the kartel because all control in the former is unified.

Immediate gains may be reaped from centralized management on both the industrial and commercial sides of a business. On the industrial side economies are speedily effected by shutting down antiquated or badly situated works, or by enlarging others and adding thereby to internal specialization, or by specializing the several works. The same improvements might be brought about eventually under competition, but only in a far-away future. On the commercial side, the trust, as the kartel which has a central sales association, corrects the overlapping of arrangements for selling. In

short, it suppresses all commercial functions which have as their object the expansion of the sales of a particular firm rather than the enlargement of the market as a whole. The trust may concentrate on a policy of evoking demand, which it is of doubtful value for any one firm to attempt under competition, because rivals would share in the profits if the attempt succeeded; and the kartel may make this its policy also, but it may be restrained by the difficulty of persuading its constituents to put money into the venture. Nevertheless, gain on the commercial side is not the invariable rule: a combination is apt to flag when marketing is complicated and requires unremitting attention to detail—because of incessant alterations in fashion—and continuous and minute acquaintance with the by-ways of the market.

As the trust has a more laboured birth, so it has a more stable existence than the kartel. Very strong forces are needed to overthrow it, when it is firmly established and not unsuccessful. But it does not follow that, once set up, it is bound to be permanent. It is so recent as a commonplace economic phenomenon that there is no inductive ground for estimating how permanent it is likely to be; but deductively we may speculate as follows. Leadership in the trust may tend to lose its first enthusiasm and alertness. The removal of competition may make way for indolence, or at least a self-satisfied conservatism. Moreover, in the absence of the struggle for existence among organizers in the industrial field which the trust has conquered, the survival of the fittest will hardly operate with thoroughness. The level of capacity of the trust's leaders and managers may, therefore, tend to decline in time: at first its leaders would have been drawn from those who had demonstrated their fitness by rising to the top under competition.

Apart from this handicap in the matter of organization, it is possible that the character of the fixed capital managed by

a trust might not keep pace with invention. Under competition in a growing industry, new businesses, fitted with the latest appliances, compel the renewal of the old-fashioned plant against which they compete and thrust fresh ideas upon inert employers. A monopoly might find that it paid best to persevere with its old machines, even if it possessed the insight to realize the economy of new inventions. In this event, a growing divergence between actual and possible costs of production would be witnessed, and, after a time, such a divergence should be sufficient to draw the attention of business enterprise to the industry. Competition might then appear on a small scale. Energetic and resourceful capitalists would be anxious to engage in the industry. In these circumstances the trust, if devitalized and no longer exercising its original fascination over shareholders, would tend to disintegrate; but in its disintegration the industry would not be destroyed to give place to a new one. The control of the old would pass into many hands at the market price of its shares, and the industry would then undergo reconstruction.

Generation and stability of trusts and kartels.—The simplest form of combination is an agreement among producers to regulate prices. If the object is merely to introduce discriminative prices, there is no reason why the combination should not stop at price regulation. If, however, the object is to get larger profits than those reaped under competition, reactions are to be expected which necessitate the assumption of some control by the combination of the supplies to be placed on the market. Production would be apt to outstrip the sales possible at the agreed prices. Hence stocks would tend to accumulate; and the growing stocks would alarm the manufacturers and undermine their determination to keep prices up. Moreover, if there were doubt about the stability of the agreement as to prices, individual producers would be unwilling to cut down their output appreciably: they would be fearful lest others should not follow suit, and should snatch an advantage were the compact repudiated. Hence, the regulation of

prices frequently involves, or brings about, the control of sales or output. Control of the latter takes the form of assigning particular markets to particular firms, which is only possible in very exceptional cases, or apportioning a certain output to each of the several combined firms. Hence one disadvantage of the kartel is that, though it may purport to leave production free, it frequently imposes rules which seriously restrict the growth of the firms with the greatest vitality. In order to remove this objection, the transfer of the whole or a part of a firm's authorized output, or assigned market, may be sanctioned. But these transfers, even when freely permitted, do not take place to the extent to which business would naturally pass from one firm to another under free competition. Transfers must be bought, but business which one firm captures from another under competition it gets for nothing. Consequently the kartel has the disadvantage of favouring decaying firms more than growing firms. But one merit which the kartel has over the trust is that it allows of individual initiative in the management of production; though, as we have seen, initiative is at the same time discouraged, because its fruits are limited by the protection of the weak firms against the strong. A kartel is easily formed, because no vast financial operations are required to bring it into being; and it is as easily dissolved, because its dissolution does not necessitate any industrial rearrangements. At most, when it dissolves, selling functions have to pass from a central office to the separate businesses; and the capital embarked in a central sales association is not relatively considerable.

There is some ground for the generalization that kartels, particularly those which have not discriminative prices in view, are more likely to appear in times of depression than in times of prosperity. When trade is bad, competition among sellers is keen and prices are driven down; and producers may try to escape from this "cut-throat" competition by agreeing to offer their goods unitedly or not to sell below a certain price. What, it may be asked, do they gain from this action? The answer is (as the theory of monopoly price to be expounded makes plain), the power to select a price, which, with the sales possible at that price, may be more remunerative to them than the price and output which would be reached under the play of competition. When

trade recovers, the inducement to combine on the part of the stronger firms is weakened, or removed. Its place may even be taken by a strong incentive to shake themselves free from the fetters on their enterprise. A widening market is the opportunity for the pushing and alert. In brisk times the most strenuous firms will probably chafe at, and possibly break through, the regulations of the kartel which directly limit the output, or the marketing sphere, of each of its constituent businesses.

As regards the generation of trusts, there are two chief sets of circumstances in which the condition marked (*b*) on page 144—that is the prospects of large profits from large fresh investments—may appear. The one set is found—to state it in an extreme form—when establishing the industry on a much larger scale would so appreciably lower the cost of production that the commodity would come in touch with a new range of demands which are highly elastic. The other is found when the industry is passing through something of a revolution, in the matter of productive methods, which will prove very costly. As regards the second case, under competition the revolution might take very many years to complete itself, and its expense would retard its consummation. A company with enormous resources could carry the revolution through rapidly; and by doing so it might make prodigious profits. As regards the first case, there is no assurance that competition will bring about a refounding of the industry on a new scale in a reasonable time, if it will at all. It is presupposed that the industry is at a position of equilibrium, but that actually another position of equilibrium exists for a much larger output. It is presupposed, further, that the distant position of monopoly equilibrium is the more advantageous for the monopolist, though it may yield a smaller rate per cent on capital. Evidently, a deliberately planned campaign on a magnificent scale may be needed if this second position is to be seized.

BOOK IV.

EXCHANGE OR THE EQUILIBRIUM BETWEEN DEMAND AND SUPPLY.

CHAPTER XIV.

COMPETITION, BARTER, AND THE PRICE OF NON- REPRODUCIBLE THINGS.

THE economics of exchange is commonly taken to consist essentially in the theories of rates and quantities of exchange in the home and foreign trade. The theory of rates of exchange is known as the *theory of barter* when no money is used. When money is used, it is known as the *theory of price*, in its relation to the home trade, and the *theory of international values*, in its relation to foreign trade. We shall see as we proceed that there is a close analogy between all these theories, and particularly between the theory of barter and the theory of international values.

The complete theory of rates of exchange is sometimes called "*the theory of value*". But it is best not to give it this title, because by some writers the theory of value is conceived as covering also the branch of economics known as distribution, that is the economics of the sharing of wealth. We shall observe in due course that there is not only an intimate connexion, but also an underlying identity, between the theory of exchange and the theory of distribution.

In this chapter we shall inquire into the essentials of the

theory of barter ; but competition must be defined first. Competition has frequently been referred to already, but so far the reader's general notion of what is meant by it has been relied upon. This seems as suitable a place as any to fix our ideas about it, as competition dominates most of the exchanging done in the world.

Competition.—*There is economic competition (a) when would-be buyers bid against one another and (b) when would-be sellers bid against one another.* The act of bidding is to be conceived broadly, and all factors in production, as well as other things, are to be regarded as objects of purchase and sale for the purpose of this definition. Thus competition may be one-sided or two-sided. As one-sided, it is competition between buyers or competition between sellers ; and, as two-sided, it implies both.

When competition is defined in this way, we realize immediately that it does not imply selfishness any more than demand does. The purchaser of a picture may want it to give to somebody else. One person may compete against another for a position because he covets it, not for the sake of money, of which he may have as much as he wants, nor for the sake of power, for which he may not care, but in order that he may play the part which rightly or wrongly he esteems himself fitted to play. As things are, admittedly, such a man may be a rarity ; but in most of us mixed motives prevail. People choose their work with some feeling of its value in the world, and perhaps with a half-heroic intention of making it more valuable, but at the same time they look forward to advancing their material interests—which include the interests of families and possibly of friends. With the value of competition and the degree in which it needs control we shall deal in Book VII.

Under competition one price only tends to be charged for the same commodity at the same time and place. This

can easily be proved. If three grocers, Brown, Jones, and Robinson, are trying to sell in a district a certain kind of tea, Brown at 2s. a pound, Jones at 2s. 6d. a pound, and Robinson at 2s. 8d. a pound, and if Brown could supply all the tea needed, all consumers who knew of the fact would buy of Brown, and if the fact were fully known Jones and Robinson would sell no tea. In order to sell any tea, Jones and Robinson would have to drop their price to 2s. Because of the competition of Brown, neither could extort more than 2s. a pound from anybody, even were his desire so intense that rather than abandon tea he would buy a certain amount at 4s. a pound. If Brown could not supply all the tea needed, nor Brown and Jones together, and Robinson would not, or could not, sell for less than 2s. 8d. a pound, tea would sell finally at 2s. 8d. a pound. The public would first flock to Brown's shop, and by competing with one another would force the price up to 2s. 6d. When the price rose to 2s. 6d. they would shop indifferently at Brown's and Jones's, but, as the supply of tea would still be insufficient, they would compete with one another and force the price up until it rose to 2s. 8d. and Robinson's supply came into the market.

Hence, under competition one price must rule in a market for one commodity; whatever the height of the initial demands of the consumers and whatever the differences between the prices at which sellers are willing to sell if need be. Nobody would insist on selling at the lower price when he was offered the higher price—that is ordinarily. What is true of tea in the above example is true of everything else when competition rules; and it remains true when there is no money to express prices in and they are consequently quoted in terms of other things.

The theory of barter.—Very few words are needed to explain this theory, and it can be explained most convincingly with the aid of an example. Take the case of two savages

one of whom possesses a store of apples and the other a store of nuts. Call the one with apples A and the one with nuts N. If the fact is that the fraction which may be written

$$\frac{\text{the initial utility of nuts to A}}{\text{the marginal utility of his apples to A}}$$

is greater than the fraction

$$\frac{\text{the marginal utility of his nuts to N}}{\text{the initial utility of apples to N}}$$

exchange will begin. Thus if A would give one apple for ten nuts rather than have no nuts (which means that the initial utility of a nut to A is $\frac{1}{10}$ of the marginal utility of his apples), and N would give forty nuts for an apple rather than have no apple (which means that the marginal utility of his nuts to N is $\frac{1}{40}$ of the initial utility of apples to him), both would gain from effecting an exchange.

Exchange will continue until the ratio between the marginal utility of apples and the marginal utility of nuts is the same for A and N. Up to this point, exchanges can be arranged which are beneficial to both, but after this point is reached further exchange would inflict loss on one or both of them. These conclusions follow from the law of substitution, indifference, or equi-marginal returns, in its application to two persons who can effect substitution through barter only.

It is of interest to observe that the final rate of exchange is indeterminate, if we suppose that equilibrium is reached by means of a number of separate exchanges which may be effected at different rates. If A got the best of the bargain in each exchange as a rule, the final rate of exchange would be more favourable to A than it would be if N got the best of the bargain as a rule. In the former case, the final rate of exchange would be a higher price of apples in nuts than in the latter case. It is also of interest to note that, just as the final rate of exchange is indeterminate when the distribution of the advantage resulting from each exchange in a number

of exchanges varies, so are the quantities of apples and nuts which would have changed hands when the exchange was complete. Fewer apples and more nuts would have changed hands if A got the best of the bargains on the whole than if N did.

Suppose now that there are many savages with apples and many with nuts, and that each savage goes about from one person to another trying to get the most favourable rate of exchange—in short, suppose there is competition. In this event it would not be so easy for anybody to get much the best of the bargain in his transactions, and the range of final rates of exchange would consequently be reduced. The more complete competition became, the more would this be the case. If competition became absolutely perfect—as it could not actually—the higgling of the market would bring about a single rate of exchange at which all would trade, and it would be found that there was only one rate which would produce equilibrium. It would be such that the ratio between the marginal utility of apples and the marginal utility of nuts would be identical to all, after each had exchanged as much as he liked at that ratio.

The theory of barter looks more tangled when we suppose that the parties to the barter can by working acquire more of the things which they are offering for exchange. When we suppose this, we have to allow for a balancing between the marginal dissatisfaction involved in working and the marginal satisfaction got out of its proceeds after barter has taken place. And yet more complexities appear when we admit that each person can work at producing different things, either apples or nuts, or some of each, or other things. Into these complications we need not enter, because, of the principles to be applied in allowing for them, sufficient will be learnt from the treatment which follows of price determination when goods are produced by free agents. As most of us give up the

practice of barter before we leave school, it might be thought that analysing it here is wilfully to bewilder the student. But this is not so. Apart from explaining equilibria in barter, the theory lies at the foundation of some of the most difficult problems of distribution and international exchange.

Diagrammatic treatment of barter—In fig. 7 measure quantities of nuts along OX and quantities of apples along OY . Suppose that the bartering has to be effected at one rate of ex-

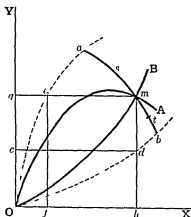


FIG. 7

change only, and that A and B begin by tabulating their offers at different rates of exchange. Let the heights above OX of points on the curve OA indicate the quantities of apples that A would give for the different quantities of nuts measured along OX , and, similarly, let the distances between OY and the curve OB indicate the quantities of nuts that B would give for different quantities of apples. The final position of equilibrium is given by the intersection of the curves. Oh of nuts will be paid for Og of apples.

Let us now imagine that business is done in a series of exchanges of small amounts, one apple, say, being sold at a time. Consider the case of A and suppose he invariably gets the worst of the bargain and has always to pay as much as he would pay. By the time

he had purchased Of of nuts he would have paid altogether, say, cf in apples. The point c is, then, one point on his exchange curve. Other points can be obtained in the same way by considering how many nuts he would have paid away when he had obtained other quantities of apples than Of . When we join together all such points, we get the curve Oa . We suppose that when a is reached B will not sell any more nuts at terms which A could offer. This curve Oa with its continuation is known as A 's *indifference curve*. It is called A 's *indifference curve* because it indicates the total losses in apples against total receipts in nuts that would leave A without either advantage or disadvantage. The curve the first part of which is Ob is B 's indifference curve. At the point b bartering would stop, we suppose.

Now, actually, in the course of successive barterers, A might get the best of the bargain at one time and B at another time. There are therefore a number of stopping points, or positions of equilibrium, besides a , m , and b , namely s , t , and many others. Let all such points make up the curve amb . It is known as the *contract curve*.

The contract curve and indifference curves are mentioned here mainly because they will be met with in some advanced works on economics, in the treatment for instance of certain problems of distribution and foreign trade. They are fundamental technicalities which have a place in the currency of advanced parts of the science of economics, though their use without comment is unusual.

In order to make this analysis complete, it may be added that Oa and Ob on being continued would eventually meet. Their intersection would mark a quantity of exchange which could not come about voluntarily but which, if enforced, would leave neither A nor B better or worse off than they would have been if they had not bartered at all.

The price of fixed stocks.—The explanation of the price of fixed stocks of things, that is of things which are not reproducible, like old-masters and rare editions, presents no difficulties. If the stock consists in just one thing the person who would give most for it gets it, and at a price just exceeding what the next highest bidder would have paid. If the stock consists in several things which are exactly similar to

one another, the price at which they sell is approximately or exactly the demand price for their quantity. Let the ruling demand prices for specimens of an old stamp be as follows :—

1 — 18s.

2 — 15s.

3 — 12s.

4 — 11s.

5 — 10s.

Let there be four specimens in the market and suppose that perfect competition rules in respect of the transactions between their owners and the buyers. Then these four will sell for more than 10s. and for 11s. at most. There can be only one price. It cannot be more than 11s. for only three would be purchased at more than 11s. Nor can it be as little as 10s. because five would be purchased at 10s. If the price showed a disposition to settle at 10s. the competition of buyers would force it up. Of course, if the demand price for five specimens differed from that for four by a farthing only, the price when four were sold would be exactly the demand price for four.

CHAPTER XV.

THE LONG PERIOD AND SUPPLY PRICES.

WE are now approaching the problem of the normal prices of reproducible things under competition. Normal prices usually mean in economics the prices that tend to be realized in the long run or in the "long period". They are said to be governed by demand and supply, and the statement is true if vague. It means that the price of a thing is settled on the one side by demand prices (that is by the prices which will be paid when different quantities of the thing are to be had), and on the other side by supply prices (that is by the prices at which different quantities of the thing will be offered). We have already learnt about demand prices. In this chapter we shall ask what settles the supply prices for the various possible supplies of a thing in the long run ; and, in the next chapter, we shall deal with the balancing of demand prices and supply prices. But, before indicating how supply prices are governed, a few words must be said of the meaning of "long period," which has a technical economic sense.

Normal or long-period effects.—By long-period effects we understand what would be the ultimate results, apart from any exceptional conditions, if (a) time were given for all the actions and reactions consequent upon the operation of the cause to work themselves out, and (b) no other change took place.

Most of our generalizations above about demand and production relate to the long period. Nevertheless, a specific

illustration, now that the time has come to make this conception explicit, will not be out of place. Consider the consequences in the long period of an increased demand for felt hats. At first, as the industry of felt-hat-making had previously been organized to meet a demand smaller than the new demand, the prices of felt hats would rise. Labour, capital, and enterprise, would therefore flood into such hat-making, because it would have been rendered relatively more attractive. The outcome of the flooding of capital, labour, and enterprise into this hat-making industry would be an increased annual supply of felt hats and a fall in their price; and the inflow of the factors of production, and the consequent fall in the prices of its hats, would go on until the hat-making industry in question was no more attractive relatively than other industries. But the most would not be elicited all at once from the incorporation of large fresh supplies of the factors in production. At first the new labour would be untrained and unskilled; and, at first, full use would not be made of the improved opportunities of producing economically afforded by the increase in the size of the industry. It is only, however, when the tardier effects have had ample time to come about, and in the supposed abeyance of any other tendencies affecting our hat-industry, that the long-period results of the increased demand for felt hats on their price, and on the magnitude of the felt-hat industry, are said to be reached. Strictly speaking, they are never reached: to this point we shall return in a moment.

On the side of demand the long-period has a similar meaning. Long-period effects on demand are the effects brought about, after demands have had to be readjusted, when time has been given to the community to accommodate itself perfectly to the new disposal of income. As in conditions of supply, so in conditions of demand, long-period results are never quite realized.

When we say that a long-period result is the result which would be arrived at if time were given for every one of the direct and indirect consequences of a change to appear, on the assumption that meanwhile no other independent changes occurred, it at once becomes evident that it must generally be impossible to point to any existing situation and say "This is a long-period result". Long before the normal position of equilibrium consequent upon some alteration, say in demand, is attained, other independent variations in economic conditions are likely to have been sprung upon the community and the direction of the tendency to a new position of equilibrium to have been altered. And immediately after this readjustment of economic tendencies, another diversion may occur; and so on *ad infinitum*. Moreover, in view of social friction, the exact attainment of the theoretical long-period result would be out of the question, even in the absence of the disturbing factors considered above.

Is a discussion, then, of long-period results valueless? Is it viciously abstract, that is so abstract as to be of no practical use? The negative answer is the right one. A consideration of normal equilibria is serviceable for these reasons. First, it accounts for what actually is, and explanation is of practical value. Just as the irregular movements of a body can be explained only by the tendencies created in it by variations in the attractive forces bearing upon it, so economic events can be explained only by the tendencies created from time to time by variations in the impulses and circumstances by which society is governed. The complete explanation of economic phenomena can be found only in a study of *tendencies*. Secondly, though normal positions of equilibrium are never exactly reached, they are reached approximately in the generality of cases, particularly as regards broad economic movements. So we may confidently maintain that the imaginary forms which the theoretical economist deals with are

the moulds, so to speak, of the actual, whether their impress is immediately perceptible or not.

Determination of supply prices.—Supply prices mean the prices at which different quantities of a thing will be offered. If the thing is not reproducible, it is clear that they must depend on the values attached to the several units of the thing by the people who possess them. To get any of them, other people must offer more than the possessors think they are worth to themselves; and, because of the law of diminishing utility, to get many, more must be offered per unit than to get a few. This is enough to say of the supply prices of non-reproducible things. But when we pass on to the reproducible things, we perceive at once that the analysis must be carried further, as the supply prices of these are obviously affected by the prices at which new supplies will be produced. Moreover, it is equally obvious that, if the thing is a perishable, or the existing supply is small in relation to the requirements of the community, the governing supply prices are those that relate to new supplies; and it happens that most things are perishables.

We pass on, then, to consider what fixes the long-period supply price for any given quantity of a commodity. It goes without saying that it must be cost of production in some sense; but we have to ask in what sense and whose cost of production. In seeking the answer to this question, we shall still suppose for the sake of simplicity of exposition that each business is ruled by a single employer, as making this assumption does not alter the essential character of the problem.

Now, from a first hasty survey of the field of inquiry, it becomes immediately apparent that we can considerably limit it. For, demonstrably, we need not consider businesses which are growing up, or decaying, or are failures which would never have been started if the future could have been foreseen, since costs in these businesses have a negligible in-

fluence upon normal price. The enterprising man who starts a business is prepared to work for years for a small income in the hope of getting a larger income when he has established himself. For years the uncertainty of his market, the smallness of his factory, and his being pinched for capital, so that he has to do without plant which is almost indispensable, may keep his expenses high. He sells, nevertheless, and must sell, at the same price as the fully-grown firms with which he is competing; for, under competition, there can be only one price in one market at one time. He sees his compensation in what his earnings will be when his business reaches its prime—and these eventual earnings, of course, will be governed *inter alia* by the length of time that a man must wait in the trade before he can expect to get them, and by the degree of probability that he ever will get them. The young business is like the young man just starting in a profession where he does not employ labour, say that of the barrister. The latter's earnings are not governed by what he would work for if he was never to get more briefs than he did at first. The novice's cost of living does not settle the fees paid to barristers. They are determined, so far as they are fixed from the supply side, by what the barrister would work for when he was fully established in his profession. And, as to businesses that are decaying or are failures, their position is similar to that of growing businesses. They must make what they can, in view of the prices established by the competition of more efficient businesses, and try to be satisfied, or decide to discontinue.

We fix our attention exclusively, then, on the mature firms which maintain their position satisfactorily in the industry; and it is at once evident that different employers must produce at different expenses per unit of output (apart from their own earnings for the work that they do) even if we take only fully-developed businesses which are prosperous into account.

In expenses of production we include *all* the expenses to which the employer is put as a producer, including wages and salaries, cost of material, cost of marketing, charges for his premises, interest on capital, whether it is his own or borrowed, and any other outlay incidental to his production. Consider, for instance, the felt-hat-industry. Suppose that at a particular time it is organized to turn out a weekly supply of 10,000 hats. One firm might produce hats at an average expense (that is expense per unit of output) of 5s. But it does not follow that every firm would be producing at an average expense of 5s. per hat. Indeed, it is practically impossible that every one of them should. Some of the employers would be cleverer and more painstaking than others, and more successful in getting the most economical labour, plant, material and accessories, for their money and in organizing their works. And, when we add on to the expense per unit of output of each employer an amount per unit which makes a just sufficient inducement to have attracted him into the industry—that is to say, his supply price of himself per unit of output,—we are still bound to have considerable differences in the complete costs of production per unit of output which are then obtained.

Now it is clear that the highest of these complete costs of production per unit must be the supply price for a weekly output of 10,000 hats. If more were paid, other people would be attracted into the industry and additional capital would be invested in the industry, so that a greater output than 10,000 hats would be reached; and, if less were paid, a sufficiency of labour, capital, or employers would not be attracted into the industry to turn out continuously 10,000 hats a week. The firm with the highest complete costs per unit of output is commonly called the "*marginal firm*" (p. 39); and there may be more than one. Broadly speaking, the marginal firm in an industry of a given size is the firm which is just efficient

enough to maintain its position, when the industry is of that size, and pay to the employer his supply price of himself. We have to use the conception of the "marginal firm" because the profits made for themselves by employers of super-marginal capacity may be a great deal more than the profits for which they would be willing to go on with their work. They earn as much as they do because prices must be sufficient to enable economically inferior men, with whose services the community could not dispense, to make a living.

The conclusion of the whole matter, the reader will perceive, is that *the supply price of a commodity for any given output of an industry is the complete cost of production per unit of output of the mature firm which is marginal for such an output of the industry.* This supply price is commonly called the "*marginal supply price*" or "*marginal cost of production*"; and in cost of production cost of selling is, of course, included.

The reader may demur at first to this conclusion, the demonstration above notwithstanding. Why, it may be asked, do not consumers buy only the hats produced cheapest, and wait for more of them, instead of buying dear ones? The obvious answer is that the number of cheap hats obtained then would not be sufficient for their needs together with the maturing needs of other people who would be wanting the hats others were waiting for by the time they were produced. Or, why, it may be asked, should not the cheapest producers get all the trade and furnish the whole of the 10,000 hats, to recur to our previous example. The answer is that the number of these people is not unlimited, while the amount of work each can undertake is limited. Each producer tends to work up to the point at which his marginal costs equal price (see pp. 93-7), and to go beyond this point and aim at a larger output involves adding to his costs more than he adds to his receipts. This answer introduces an important corol-

lary to the fundamental conclusion laid down above as regards the supply price for any given output, namely that the marginal costs in every business for the given output of the industry tend to be equal to this supply price—and in a sense to govern it, as could be proved. Indeed, the attachment of this corollary is essential, apart from refinements of theory, to cover the cases in which no new firm is created and the extra output is got, and perhaps must be got, from existing businesses. In these cases, the new supply price must be the new marginal costs in the businesses that enlarge their output; because if it were less, they would not do so, and, if it were more, they would enlarge their output more.

Some of the complications in the argument in this chapter are caused by group production, that is by the organization of production in groups containing many people and large quantities of other factors in production. When an individual works alone the problem is much simplified; and this simplified problem has been solved incidentally in the foregoing.

Refinements of the theory of supply prices.—The complaint may be made about the theory expounded above that it leaves us in doubt as to where the marginal business exactly is, for it is said to be outside the class of “failures” that nevertheless continue to exist, and the term “failure” may be given a very wide application. It might be contended that all businesses with expenses per unit of output above those of the most characteristic businesses in the industry (which may be called typical or representative businesses) are likely to be “failures” in the sense that they have not fulfilled the expectations of those who started them, because most people base their calculations on what is usually met with. Consequently, there is much to be said for the view that it is cost in typical or representative firms that governs output from the supply side; for, in the case put, these firms would be the marginal ones, and, according to the above demonstration, it is cost in marginal firms that settles supply. If industry were such that anybody could

instantly retire without loss, if he did not make the profits the expectation of which induced him to engage in a given undertaking, there would be no difficulty as there would be no surviving "failures". This complaint is worth recording, but it will be evident that the account given above of supply prices is formally sound; its only defect is that it leaves open to question whether there are always marginal firms distinct from typical or representative ones.

So much may be said as regards the marginal firm, but there remains another point to consider. While the method adopted in the section above may be the ordinary method of explaining the price determination of manufactured things from the supply side, we frequently meet with the statement that the supply price of agricultural produce is settled by the cost of production on marginal land, or even, according to a refinement of the theory, by the marginal cost on any land. Moreover, it will be apparent that the refinement in question holds of manufactured things also, in rigid theory, if it holds of agricultural produce. Now, as regards this theory—that the supply price is the marginal cost in every firm,—three observations may be offered. In the first place, it may be pointed out that the marginal cost of every firm tends to equal the cost per unit of output of the marginal firm. For, if the latter is the supply price of the marginal firm (meaning the price at which his supply will be forthcoming), it will pay him to offer at that price an amount of supply that brings his marginal costs up to it, but no more; and, if it pays him, it must equally pay the non-marginal producer to do the same, even if his costs per unit of output are less. A reference to fig. 5 on p. 97 will make this clear. In the second place, it must be objected that the theory under examination is incomplete until the additional statement is made that the outputs of the industry for different marginal costs depend upon the remunerations at which different numbers of employers will supply themselves. And in the third place, it is to be observed that the rougher explanation of supply prices (namely that the costs of production per unit of output of the marginal firms govern supply prices) reduces in pure theory to the subtler one, as supplemented in the previous sentence; because, to complete the rougher theory, it is necessary to add that all businesses tend to produce up to a

point at which their marginal costs equal price. Without this addition, there is no satisfactory answer to the objection that, if any business had a higher cost of production per unit of output than other businesses, the latter might produce more and squeeze the less efficient producer out of the market. The correct answer to the objection, of course, is that, in a position of perfect equilibrium, it would not pay the other businesses to produce more, because to do so would be to raise their marginal costs above price (see the section in small print on p. 97). Nevertheless, when the suggested addition is made, the rougher theory comes nearer the facts in this imperfect world in which tendencies are retarded. It will be observed, after Book VI is read, that both the approximate and refined explanations lead ultimately to the conclusion that the marginal supply price of a given output of anything produced is the sum of the marginal supply prices of the factors needed to supply that output.

Cost of production has many meanings.—The student may escape much confusion by noting the contrasts drawn below and deciding whenever he meets with the term “cost of production” in which of the following senses it is put forward. It is commonly used quite loosely.

Cost of production may refer (a) to the disutilities or dissatisfactions involved in production, though it is usual to speak of these as *real costs*, or (b) to money cost of production, sometimes termed “*expenses of production*,” though the latter expression is not generally intended to cover necessary payments for the office of employing.

Total or aggregate cost (money or real) may refer to a business or to a whole industry, and include or exclude necessary payments for the employing factor.

Marginal cost (money or real) in its most common references may mean either of the following:—

1. The costs (including the employer's necessary remuneration) per unit of output in the marginal firm. It would save confusion if this were called “*Complete costs (or expenses) per unit of the marginal firm*”.

2. The addition made to the costs of a business by the production of the last increment. This might be called "*marginal costs (or expenses) of a business*" or "*private marginal costs*".

In pure theory these two marginal costs tend to be the same, as price must tend to cover and just cover the former ordinarily, and it pays each producer to produce up to the point at which his marginal costs equal price but not beyond.

Besides these meanings, a third meaning of marginal cost must be recognized for certain purposes in advanced economic analysis, namely the addition made to the aggregate costs in an industry (including employers' normal remuneration) when the industry is incrementally increased in size. This might be called "*marginal costs of an industry*" or "*collective marginal costs*". We have used the conception, without giving it a name, in dealing with increasing and decreasing returns, when it was pointed out that an industry might be subject to decreasing returns because its private marginal costs rose (or its private marginal returns fell, which means the same thing), while at the same time its collective marginal costs declined. The conception of collective marginal costs is of great value when questions are being considered from the social or national point of view.

CHAPTER XVI.

NORMAL PRICE.

Equilibrium of demand and supply.—Now that we have learnt how demand and supply prices are arrived at, it is easy to explain the settlement of price in the long period, which is known as *normal price*.

In the table that follows, the supposed marginal demand prices for different quantities of hats per week are stated, and the supposed marginal supply prices when the industry is organized in each case to supply the same quantity per year :—

Number of Hats per Week.	Marginal Demand Prices.	Marginal Supply Prices.
5,000	5s. 8d.	5s. 4d.
6,000	5s. 7d.	5s. 3d.
7,000	5s. 4d.	5s. 2d.
8,000	5s. 2d.	5s. 1d.
9,000	5s. 1d.	5s.
10,000	4s. 11d.	4s. 11d.
11,000	4s. 8d.	4s. 10d.
12,000	4s. 7d.	4s. 9d.
13,000	4s. 5d.	4s. 8d.

The prices in the second column descend for reasons already expounded (pp. 40-2). Those in the third column may ascend, or descend, or keep the same, or do first one thing and

then the other. They will ascend if decreasing returns rule in the industry, descend if increasing returns rule in the industry, and keep level if returns are constant.

It will readily be perceived that, in the case of which the relevant circumstances are tabulated above, 10,000 hats will be produced weekly and the price will be 4s. 11d. Suppose more were turned out, say, 11,000. Then some employers would be manufacturing at an average cost of 4s. 10d. and selling at 4s. 8d., which would not be good business. Consequently, the industry would contract until an output of 10,000 hats a week was reached. Suppose that 9,000 hats a week were turned out. Price would then be 5s. 1d. and the full costs of the marginal firm 5s. Consequently, the industry would be exceptionally profitable and would attract extra supplies of capital, organizing power, and executive labour. So its annual output of hats would rise. As the supply of hats rose, the price would fall; and the rise in supply would cease when the output had advanced to 10,000 hats a week and the price had dropped to 4s. 11d.

So we may generalize that *the price of a commodity will be the price at which equal quantities are demanded and supplied, provided that an incremental addition to the supply would mean a supply price above the demand price and an incremental reduction of the supply would mean a supply price below the demand price.* There may be more than one such price, but it is very unlikely. It is least unlikely when demand is highly elastic.

Let us next propound the question, What happens in the long run if demand rises? A rise in demand means that the demand prices in our table are raised. Obviously consumption will be increased, but how price will be affected will depend upon whether supply prices fall, rise, or keep constant with an increased output. If supply prices fall price will fall, if they rise price will rise, if they are constant price will be

constant. The effect on price of diminished demand, that is a fall in demand, is settled similarly.

Equilibrium of demand and supply diagrammatically treated.—Consider fig. 8. Units of output are measured along OX and units of money along OY. Ignore at first the dotted line. D is the demand curve (pp. 43-4). S is the supply curve, which indicates, by the heights of its points above OX, what, in the case of the marginal firm, complete costs of production and marketing would be per unit of output when the industry was of the sizes requisite to secure the corresponding outputs measured along OX.

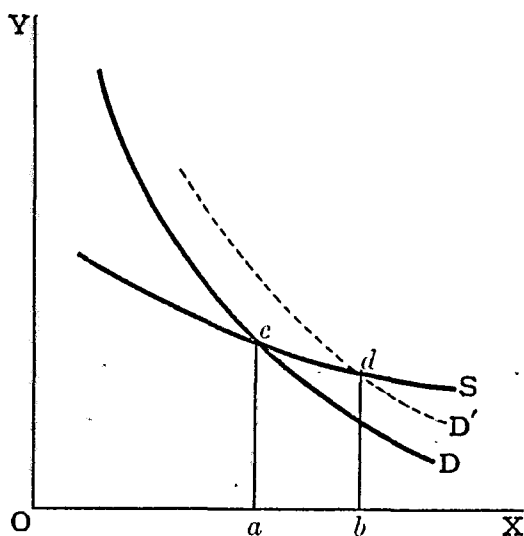


FIG. 8.

Both curves express long-period or normal conditions. As S ascends, we have increasing returns. The position of equilibrium is given by the intersection of D and S. So the normal output will be the amount Oa and the price will be ac .

Now suppose demand rises. A rise in demand can be represented by raising D to a higher level. Let the new demand curve be D' . Then the new output in the long run will be Ob and the new price will be bd . Price falls because S descends to represent increasing returns. If S ascended (to represent decreasing returns), price would have risen.

A brief contemplation of demand and supply curves in relation

to one another will disclose the fact that more than one position of equilibrium is possible. But multiple positions are only possible if supply is subject for some outputs to increasing returns; for D must descend—we may ignore any exceptions—and S can only cut it more than once by descending also.

Now carefully scrutinize fig. 9, in which four types of equilibrium are represented. It is apparent that, if the output were Om , a slight increase of output would cause loss to the producer, since cost would then exceed price. Hence a slight increase of output

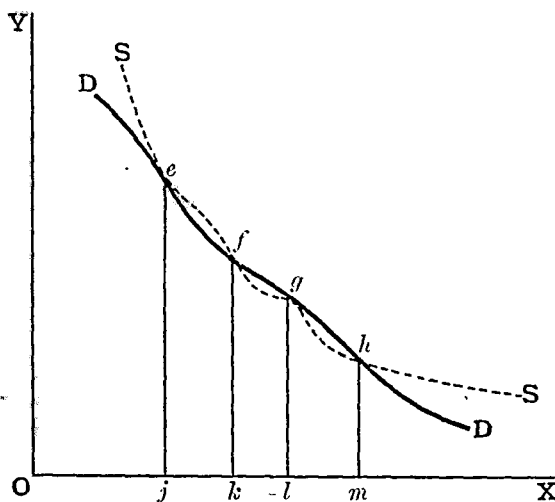


FIG. 9.

would be followed by a reaction to Om . It is apparent also that a slight contraction of output would mean exceptional profits, since cost would be below price, and, therefore, that a reduction of the output to less than Om would be followed by a reaction to Om . Because slight departures from the output Om in either direction would be followed by reactions to the output Om , the point h marks a position of *stable equilibrium*. The point f marks a position of completely *unstable equilibrium*. With the output Ok normal profits are earned. But if the output were slightly increased, profits would be above normal, since price would exceed cost. Consequently, capital and labour would be attracted to the industry

and it would go on expanding. Again, if the output became slightly less than Ok , less than normal profits would be earned (for cost would exceed price), and labour and capital would be discouraged from entering the industry and some labour and capital would be driven out of it, so that the industry would go on contracting. It is because small departures from the output Ok in either direction are not followed by reactions back to Ok , but by further departures from Ok , that the position marked by f is called a position of "completely unstable equilibrium".

Positions e and g are so unlikely that they may practically be ignored; but to make our analysis exhaustive they must just be noticed. Consider the point e . An output less than Oj means loss, so the industry would tend to contract if the output fell below Oj . An output greater than Oj would equally mean loss, so the output would tend to shrink again to Oj if it had become somewhat greater. Consequently e marks a position of *partial stability and partial instability*. It is stable as regards increases of output and unstable as regards decreases of output. Consider now the point g . This, equally with e , marks a position which is *partially stable and partially unstable*. It is stable as regards decreases of output and unstable as regards increases of output.

Joint, composite, and alternate demand and supply.—

Joint demand has been fully described on page 27. Here we shall deal with the joint demand for two things which are required in a fixed ratio and are not the objects of other demands. The remaining cases enumerated on the pages mentioned above are too complicated for treatment here; but, with the aid of the principles applied in this section and others already illustrated, they can easily be solved.

In the simple case in which two things are demanded in a fixed ratio—say the blades and handles of knives of a particular kind—the combination of the two things is the unit of demand. The supply prices of this unit are the sum of the supply prices of each of its constituents. Thus the supply price of 100 knives with handles is the supply price of 100 handles plus the supply price of 100 blades. Consequently,

the quantity of knives sold becomes the quantity at which the demand price equals the sum of the supply prices of similar quantities of handles and blades ; and the prices paid for the latter are these supply prices.

Joint supply has been described on pages 66-7. Here we take the simple case in which the sole supplies of two commodities are derived from their joint production in a fixed ratio. To find the price of the constituents of a joint supply—say gas and coke,—you proceed *mutatis mutandis* as in the case of joint demand. The unit of supply is so much gas plus so much coke, and for demand you keep adding to the demand for a unit of the gas the demand for such a quantity of coke as is made when the unit of gas is made. Consequently, the quantities of gas and coke sold become the quantities for which the sum of the two demand prices equal the supply price, and the prices paid become these demand prices. When one of the products jointly produced sells for much less per unit than a corresponding unit of the other, the former is commonly termed a *by-product*.

Upon *composite demand and composite supply* only the briefest comments need be made. All market demand is composite and so is all market supply, apart from monopoly of demand and supply respectively. Market demand is compounded of the demands of different people, which may or may not imply demands for different purposes. The composition of demand has already been dealt with ; and so has the composition of supply. The supplies of some things may come not only from different firms in the same trades, but from different trades. It should be noted, however, that technically composite demand is commonly confined to the cases in which the demands compounded are for different purposes ; while, similarly, composite supply is confined commonly to the compounding of supplies from different trades.

The chief point to notice about *alternative demand* and

alternative products, which are explained on pages 27 and 67, is that the ratio between the prices of things which are substitutes, or are supplied alternatively, do not tend to vary considerably. If tea got scarce, people would consume more coffee, so that the ratio between the prices of tea and coffee would not alter much. If the demand for barley rose, more cultivated land would be devoted to growing barley and less to growing other things, so that the ratios between the prices of barley and those of other crops would not alter much.

Diagrammatic representation of joint demand and joint supply.—The two cases treated above, in which things are jointly

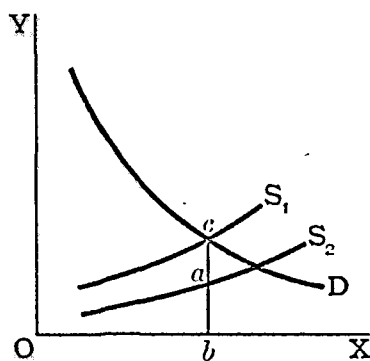


FIG. 10.

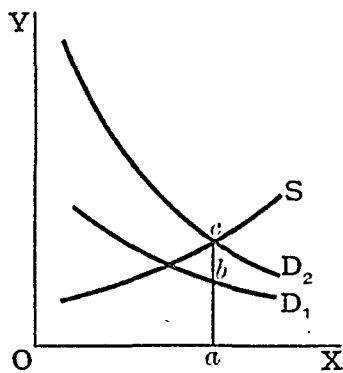


FIG. 11.

demanded, or supplied, in fixed ratios, may be illustrated diagrammatically. Consider fig. 10. Money is measured along OY and units which represent a knife-blade, or a knife-handle, or both, along OX. D is the joint demand curve for the blades and handles of knives of a particular kind. S_2 is the supply curve for blades. S_1 is the supply curve for units consisting of a knife-blade plus a knife-handle—that is to say, the distances between S_1 and S_2 are the supply prices for handles. Then Ob of handles and Ob of blades will be sold. The price of a blade will be ab and the price of a handle ca .

The diagram to the right (fig. 11) relates to two articles jointly produced, like wheat and straw, but in an unalterable ratio. For short, the articles will be called “P” and “Q”. Let units along

OY represent money and units along OX units of P, or units of Q, or units consisting of so much P and so much Q, the proportion between the units being the ratio in which P and Q are jointly produced. Let D_1 be the demand curve for P. Let D_2 be the demand curve for the combinations of P and Q the units of which are measured along OX; so that the distances between D_1 and D_2 are the demand prices for Q. Let S be the supply curve for the combinations of P and Q. Then Oa units of P and Oa units of Q will be produced and the price of P will be ab and the price of Q will be bc .

Of course, Oa does not necessarily mean the same amount when it refers to P as when it refers to Q, since in fig. 11 the ratio between a unit of P and a unit of Q is the ratio in which P and Q are jointly produced.

CHAPTER XVII.

THE SHORT PERIOD AND SUB-NORMAL PRICE.

WE considered in detail at the beginning of Chapter XV what is denoted by the expression "long period". It is a technical expression with a definite meaning. "Short period" is another technical expression which is tending to get a definite meaning. In studying the operation of causes in economics, we have to distinguish between (1) instantaneous effects, (2) effects in the short period, and (3) effects in the long period.

The short period.—Broadly speaking, short-period results mean the results that are met with—or would be in the absence of fresh independent change—when we disregard consequences which are not appreciable until after a long interval. This statement will do for general purposes, but it is too vague to handle scientifically. To make the conception of the short period precise, we must deal separately with demand and supply.

Applying it first to the circumstances of supply, short-period results may be described as the results that can be attained with existing factors in production *as they were at the time of the change which necessitated their re-arrangement*. We may think of the factors in production as classes of producing power each of which is capable of being crystallized into various forms. Men may become skilled colliers, or skilled bricklayers; a piece of land may become pasture, or an orchard; a ton of pig-iron may become a boiler, or type-writers. Some crystallized factors may be de-crystallized and

then re-crystallized into new forms at different degrees of loss and with different degrees of rapidity. Other crystallized factors cannot be given new forms at all. A highly skilled jeweller cannot easily turn to another occupation, but a linen-weaver can easily become a skilled cotton-weaver. An automatic shell-machine can shape only shells for guns, but the aid of the same sewing-machine may be enlisted to make either blouses or pillow-cases. Side by side with the crystallized factors, there is the new producing power—the rising generation, the season's cotton and the ore just being dug out—about the final form of which we may exercise boundless choice. Short-period supply prices mean marginal supply prices after such modifications as do not take a long time have been made in the relative supplies of things, with the *existing factors, crystallized or not, just as they are*. Suppose there is a sudden increase in the demand for crêpe. The short-period supply-prices would be the marginal costs when supply was increased by different amounts with the existing factors in production available just as they were; or, as we may put it with approximate correctness, *before there was a sufficient interval of time for more specialized machinery to be made, more factories to be built, and more labour to become skilled in the crêpe industry*.

This conception of the short period in relation to supply is now generally accepted by economists, but there is less agreement about the application of the idea to demand. Probably short-period effects on demand are best understood to mean such partial readjustments of systems of demand as would take place, when readjustments were necessary, before the ingrained habits of people changed and before experience had fully taught how systems of consumption should be remodelled. The reminder may not be superfluous that a system of consumption may express the wants of a business for productive purposes as well as a person's needs for consumer's goods.

It will be realized that short-period positions of equilibrium may not be perfectly attainable in fact, though they are more closely attainable than long-period positions of equilibrium.

Sub-normal prices.—The prices reached at short-period positions of equilibrium are known technically as sub-normal prices. These we proceed to investigate on the side of supply. Increased outputs in the short period are obtainable only at enhanced costs of production. This will be evident when it is remembered that the additional outputs can be procured only by working uneconomical hours, or at uneconomical speeds, or with unskilled labour, or with antiquated machinery, and, possibly, in over-crowded workshops, or in workshops suddenly brought into requisition which are not well adapted to the work done in them, and possibly with material not up to the average of that ordinarily used in respect of suitability. Hence *the effect of increased demand must be a rise of price in the short period.*

In order to understand the theory of sub-normal equilibrium when demand drops, it is necessary to distinguish between *prime costs* and *supplementary costs*. The prime costs of, say, a particular chair are the specific costs incurred on behalf of that particular chair and of no other chair, apart from the general costs of maintaining the factory in which it was made. More precisely, we may say that the prime costs of a business are the costs which cease when the business stops for a short time. Interest charges on the plant, much depreciation, rent of premises, and salaries continue; but cost of material, coals and lighting, and weekly wages cease for the time being. These costs which cease are the prime costs. The costs which continue are the supplementary costs.

Armed with this distinction we now ask, What is the effect on price of a collapse of demand in the short period, when demand is not expected to react back after a brief interval to a position above its original level? The answer is, a fall in

price. The reason is as follows. Producers can only prevent a fall in price by curtailing the supplies offered for sale, and perhaps to a large extent. Curtailing the supplies offered for sale involves piling up stocks, when it is possible, or reducing output. But piling up stocks may be futile and must be costly, because they have to be disposed of at some time and, at any rate, capital is locked up in them so long as they remain. Consequently, it will usually pay to suffer some loss through a fall in price rather than be burdened with heavy stocks. And, as regards reducing output, this is a wasteful proceeding since the full supplementary costs continue whatever the output. So, it is usually the wisest policy to suffer some loss, through a fall in price, with a view to keeping down this waste. Besides, if a producer does not reduce price when demand collapses, other producers may secure his customers by doing so. Hence price almost always drops in the short period when demand temporarily shrinks. As a rule, also, when the shrinkage of demand is expected to be permanent, it must equally be the case that price will drop at first; for, to contract output sufficiently to prevent a drop in price, means discarding fixed capital which is not yet worn out.

Some features of sub-normal conditions.—It is worthy of remark that the effect on supply and price of a temporarily attenuated demand may be of several kinds, and that the effect actually experienced in any case is determined by the character of the industry. At the extremes it may take the form (a) of a large contraction of goods offered and a small fall in price, or (b) of a small contraction of goods offered and a large drop in price. A tendency to the latter effect is certainly created in any of the following circumstances, of which the first two relate to supply while the last relates to demand :—

(i.) When the proportion of fixed or supplementary charges in the industry is high.

(ii.) When the commodity is a perishable, so that the employer cannot stock any of his produce.

(iii.) When failure to satisfy present demand does not augment future demand. Employers would be loath to satisfy a demand at a loss in the present if the same demand, or the bulk of it, could be satisfied at a profit in the future.

Finally, attention may be drawn to the way in which an industry gradually settles down to a new position of equilibrium after a permanent alteration in demand. Say demand increases. Then price leaps up suddenly, this being the immediate effect. Next, price tends to subside, at first rapidly, but afterwards much more gradually, until at last the price of the new position of equilibrium is reached, which may be above, below, or the same as, the old price. The accommodations incidental to making the best use of existing factors take place much more rapidly than the accommodations which entail new specializations and the re-specializing of such old factors as can be re-specialized. Both accommodations, of course, go on *pari passu*. But in the first few months long-period effects are inconsiderable, while after very many months short-period effects are inconsiderable. Gradually, extra supplies of good labour attracted to the industry are trained into first-class efficiency; gradually their arrangement is improved; and gradually more machinery and engines are built to meet adequately the new needs of the industry.

The course of events consequent upon a reduced demand is analogous. A sudden drop in the price will tend to be followed by a rise, at first comparatively speedy and then more tardy, for reasons which the paragraph above will at once suggest.

CHAPTER XVIII.

THEORY OF MONOPOLY PRICES.

Fundamental ideas.—There is complete or partial monopoly in the supply of a thing when there is absence, or unusual hindrance, of competition in the supply of that thing. The monopoly may be in the hands of an individual, but if the supply is large it is more likely to be in the hands of a group of people or a public authority. Hereafter, nevertheless, for convenience, I shall speak as if the monopolist were always a single person. The theory of price under conditions of monopoly will be expounded first on the assumption that monopoly is unrestricted, while throughout we shall be dealing with the long period unless a statement appears to the contrary. Afterwards allowance will be made for the limitations of a monopolist's power.

Determination of price in the absence of price discriminations.—We have seen that under competition things tend to sell at a price which only just covers marginal cost of production. This is so because if the price were higher, it would pay new producers to appear and old producers to turn out more; and the increased supply would bring the price down again. Now, under conditions of monopoly, the forces which tend to bring price to the level of marginal cost of production do not operate. There is nothing to prevent the monopolist from getting more than normal remuneration, if circumstances are favourable. Supply is under his control and he can raise price by restricting supply. He will do so,

if it pays him to do so ; and it will pay him to do so if his action results in his getting more than normal remuneration for himself. Let us call this excess gain for himself " monopoly gain or revenue ".

Now, obviously the monopolist employer or company will aim at maximizing this " monopoly gain or revenue " which we define as the excess over what normal remuneration (after deducting all expenses of production) would be under competition. It is apparent, then, that the monopolist who is guided solely by self-interest will aim at furnishing a supply which is such that a slight increase or decrease of it would diminish his gain over and above what he would get under competition for the work that he does. Outputs which satisfy this condition are said to mark positions of monopoly equilibrium. In any industry there may be more than one possible position of monopoly equilibrium, and the self-seeking man armed with a monopoly of metallic rigidity would naturally select the one which yielded the greatest monopoly gain, if he knew of its possibility. To illustrate, let us suppose that the facts, as regards cost and demand for the product of a monopoly business, are as represented in the table on the opposite page for all quantities of output for which aggregate receipts are not less than aggregate costs. What the employer would earn under competition for the work that he does is reckoned in the costs of production stated.

For the sake of argument we assume that variations of less than 100 tons in the output are impossible and that all the output must be sold. There are then two positions of monopoly equilibrium, namely when the outputs are 1100 and 1300. Small departures from either of these outputs diminish monopoly revenue. As an output of 1100 yields the greatest gain, this is the output which the monopolist will choose if he knows, or strongly suspects, that the conditions represented in the table as appertaining to such an output

exist potentially, so to speak, and could be made actual. With such an output price would be £10 18s.

Output.	Cost of Production per unit.	Aggregate Cost.	Demand Price.	Aggregate Receipts.	Aggregate Re- ceipts less Ag- gregate Costs. (Monopoly Revenue.)
Tons.	£ s.	£	£ s.	£	£
800	11 1	8,840	11 1	8,840	0
900	10 16	9,720	11 0	9,900	180
1000	10 13	10,650	10 19	10,950	300
1100	10 8	11,440	10 18	11,990	550
1200	10 7	12,420	10 11	12,660	240
1300	10 5	13,325	10 10	13,650	325
1400	10 4	14,280	10 6	14,420	140
1500	10 3	15,225	10 3	15,225	0

It might be, of course, that the creation of the monopoly lowered costs of production, and in this case there would be another source of gain. But the theory expounded above clearly holds of this case also, if by costs of production are meant these costs under the monopoly. Only in this case we have to allow that some of the monopoly gain is derived from economies in production and is not extorted from consumers.

One way of defining a position of monopoly equilibrium is to say that it is a position which is such (a) that *the addition made to aggregate receipts by an incremental addition to the monopoly's output equals the addition made to aggregate costs (including normal remuneration of employing)* and (b) that departures from it in either direction mean that the loss involved exceeds the gain involved. This should be immediately evident. If enlarging an output increases incomings more than outgoings, it must pay to enlarge the output. If the statement made in clause (b) does not hold of any given case, the position is not one of stable but of unstable monopoly equilibrium, since it would pay to enlarge or contract the output, as the case might be.

Price discriminations.—So far, we have argued on the assumption that only one price can be charged at any one time. Next we have to consider the less simple case in which more than one price can be charged. When more than one price is charged at the same time, (a) personal, (b) income, (c) trade, or (d) local discriminations or preferences must be created. "Discrimination" and "preference" are used here indifferently to mean the same thing.

A *personal discrimination* is any discrimination which is not of class (b), (c), or (d). When its sole ground is economic, it means charging one man more than another merely because he will pay the higher price if he must; and it may pay to exact the higher price from him and others similarly placed. Personal discriminations are so violently resented, and have been so heatedly denounced, that no monopolist would openly attempt to impose them.

Income discriminations are difficult to apply and are very uncommon. Usually in economic relations the income of the purchaser is not known. Discriminations roughly proportional to income may, however, be resorted to indirectly when different qualities of a thing are supplied, provided that the higher qualities are naturally, and almost exclusively, acquired by the wealthier classes. The extra prices charged for the higher qualities may be much higher than the excess of their cost over the cost of the lower qualities. Income discriminations are sometimes admitted with advantage into the principles of payment for semi-public services. Doctors' fees, for instance, are frequently charged on different scales for patients of different classes the demarcations between which are certain levels of income.

Trade discriminations mean selling goods at different prices according to the trades to which they are sold. The term is not a very appropriate one, but it is as suitable as any other that could be found. It is seldom feasible to enforce trade

discriminations, because usually it is easy to hide the ultimate destination of goods. Scales of railway freight charges may be regarded as exemplifying trade discriminations. What the railways sell is transportation, and, when it is needed for the delivery of goods, they sell it cheaper, for example, to coal-owners than to the manufacturers of pianos.

Local discriminations exist when a thing is sold cheaper in one place than in another. Local discriminations in the same country in the charges for transportable things are limited by costs of carriage. If excessive internal local discriminations were introduced, businesses would naturally be founded to carry things from places where they were sold cheap to places where they were sold dear. As railway transportation is not itself transportable, local preferences in railway rates have been common.

Local discriminations of an appreciable amount in the world's trade in transportable things are quite possible. A monopolist may sell abroad at any price which differs from the home price by cost of carriage between the foreign market and the home market, if the monopolist produces in a free trade country. And if he produces in a protectionist country, his foreign price may fall below his home price by cost of carriage *plus* the amount of the tariff on the importation of such goods as he produces. Were the foreign price to drop below this level, the goods would be sent back to earn a profit out of the high home price.

Dumping.—When a complete or partial monopolist sells his goods at a lower price abroad than he does at home, he is said, in the slang of the market, to be “dumping,” provided that the price charged abroad is less than the cost of production in the sense that, as the only price, it would not be sufficient to insure the continuance of the industry on its existing scale. Dumping is of three kinds :—

1. Dumping to win foreign markets.

2. The dumping of surpluses.

3. The dumping of things deliberately produced to be dumped without regard to destroying foreign competition.

Dumping to capture foreign markets is a hazardous speculation. The intention of the monopolist who practises it is to sell very cheap until competitors have been driven out of the foreign market, and then to raise the price to recoup himself for the losses incurred during the dumping and to make a profit. Naturally, when the price is raised the competitors may be attracted back again. If they are not, the country dumped into may lose heavily; and, even if they are, there may be a serious balance of loss through the temporary wastage of producing power and the new element of risk thus introduced into industry. It is evident that such dumping, if it comes to more than mere advertising, must be uneconomical from the international point of view and may be highly damaging to the country whose markets are attacked.

The *dumping of surpluses* is common, but genuine surpluses cannot be very large ordinarily. A "surplus" in this connexion denotes output over and above what the monopolist would have produced (a) if he had correctly estimated demand and cost of production, or (b) if it had been easy to adapt his output to demand. Demand cannot be accurately anticipated, and the derangements caused by altering the output of a very large business may be expensive. Hence surpluses arise from time to time. It may be better for the monopolist that they should be sold abroad, even for something less than their full cost of production, instead of being placed on the home market, as their absorption by the home market would depress the home price. But it would be difficult to prove that it would be better for any country to which they were sent, in view of the disturbing effects of such irregular supplies on industry, and in view of the fact that

they need not be sold at much less than the price ruling for the time being in the country in question.

Producing to dump continuously is another matter. It implies that it may pay the monopolist to make permanently such local price discriminations as the existence of distinct nations renders feasible, even if the lowest price is beneath cost of production, as defined in the first paragraph of this section (p. 185). Its possibility is discussed beneath. Observe that monopoly—in the form of specific agreements among producers at least—is requisite if any discriminative charges are to be adhered to. Competition would at once destroy them.

Determination of prices when discriminations are possible.—That preferential or discriminative charges will be made by monopolists when they can be made, follows at once from the fact that the monopolist can magnify his gain by making them. If the monopolist can deal separately with two or more groups of purchasers, he will try to sell to each group at such a price that his profits are maximized. It is exceedingly unlikely that his gains will be maximized by selling to each at the same price. And it is, in addition, so exceedingly unlikely as to be practically impossible that his output would be the same when he charged one price as when he charged more than one. In the latter case, his sales might exceed or fall short of his sales in the former case. The substitution of discriminative charges for a single monopoly price, especially if it brought about larger sales, might prove beneficial on the whole to the community as well as to the monopolist.

When discriminative charges are made, can it ever pay the monopolist to keep one of them continuously beneath cost of production?—that is to say, to take a particular case, can it ever pay to dump abroad year after year beneath cost of production if foreign competition is not thereby destroyed? It could never pay if by cost of production is meant the addi-

tion made to aggregate cost by the production of the things sold at the low price, when this addition is expressed per unit of the quantity dumped; because this is to say that the cost of the venture is greater than its yield. But it might pay if by cost of production is meant the aggregate cost of the whole output expressed per unit of output. For enlarging the output would reduce this average cost of the whole if increasing returns ruled in the industry, and the seeming loss incurred over sales at the low price might be more than recouped by the saving on the cost of the things sold at a high price. For the same reason, in the case of a combination of firms, the low price might be beneath cost in the marginal firm and yet pay the combination.

This is a significant corollary from the theory of monopoly prices; and there is another corollary closely related to it which is of practical moment. It is that some enterprises which would never be remunerative if one price only were admissible could be rendered remunerative by preferential charges. We have an example in railway charges in certain places; many a line would never pay if all goods had to be carried at the same rate, except for such additions as represented reasonable compensations for extra difficulties in dealing with the goods. But it is essential that the enterprise should be subject to increasing returns; or that its cost should be a fixed sum however much or little use was made of it, which means, broadly, increasing returns since, in this event, the later returns are got without any addition to the cost. The necessity of increasing returns is proved in the paragraph above; for it is demonstrated there that it only pays to make any charge beneath cost of production (meaning aggregate costs expressed per unit of output or service) when increasing returns rule, and, if no single charge would be remunerative, it is obvious that one at least of the two or more preferential charges that make the enterprise

pay must be below this cost of production and one at least above it. One of the purposes of the State regulation of railway rates is to secure such a system of preferential charges as will magnify the use made of railways while adequately remunerating and encouraging railway enterprise.

Monopoly price diagrammatically explained.—In figs. 12 and 13 let DD' and $D_1D'_1$ be the demand curves respectively for two groups of purchasers P and Q of a monopolized article, whether they reside in the same country or not. For simplicity suppose that production is subject to constant returns, so that the cost of

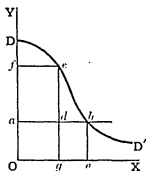


FIG. 12.

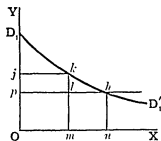


FIG. 13.

production (including normal employer's remuneration) expressed per unit of output is a constant. Let the cost of production be Oa , which equals Op . The monopolist will try to sell to each group of purchasers at such a price that his gains from that group of purchasers are a maximum. That is to say, he will try to sell to group P a quantity Og which is such that the rectangle ae is the largest that can be introduced between aD , ab , and bD ; and to sell to Q a quantity Om which is such that the rectangle pk is the largest that can be introduced between pD_1 , ph , and hD_1 . It is exceedingly unlikely that Of should equal Oj . The monopolist secures the greatest gains when he sells to P at a price Of and to Q at a price Oj . Under competition the price would be Oa .

Evidently $Og + Om$ may be greater or less than sales at a single monopoly price, and $Dfe + D_1jk$ may be greater or less than the

consumers' surplus left when a single monopoly price is charged, according to the slopes of DD' and $D_1D'_1$.

Figures can be constructed to show what may be expected when production is subject to increasing or decreasing returns, and the conditions under which some of the output may be sold at a price beneath cost of production, as defined in the section above.

Restrictions experienced by monopolists.—It must be allowed, in qualification of what has been said above, that a monopolist has seldom a free hand to settle price. He must pay some regard to public opinion. Unpopularity might eventually cause a loss far greater than the profits which would be resigned on the monopolist's deciding not to embark on an unpopular course of action. More or less satisfactory substitutes for the monopolized article may be discovered if people are goaded into seeking them. Again, when competition is not impossible, rival producers may be tempted into the field if the monopolist makes his gain per unit of output excessive. Finally, there is a greater chance of interference by public authorities when monopolists totally disregard the public interest. Hence, unpopular discriminations will usually be avoided by monopolists, and they will choose a large output (meaning a low price) if no very substantial addition would be made to monopoly profit by restriction of output.

A monopolist's power is further curbed when consumers are allied. A compact union of consumers may force the monopolist to sacrifice a great part of his monopoly revenue. By combining, consumers establish what may be called a *consumers' monopoly*. When any service or commodity is consumed by one person or one firm only, there is monopoly of consumption, since competition is then absent on the side of demand.

It is barely necessary to point out that a public authority which worked a monopoly would not be likely to aim at monopoly revenue, as above defined, even within the limita-

tions just mentioned. If the industry, or service, which it monopolized were used by all classes, it would pay some regard to consumers' surplus (pp. 49-54). From demand and supply schedules (were they obtainable), it would be easy to work out theoretically what the price, or prices, should be on any understanding that so much monopoly revenue was to count as equal in advantage to so much consumers' surplus.

CHAPTER XIX.

INTERNATIONAL TRADE.

Differences between the theories of home and foreign exchange.—It is emphatically not cost of transport which differentiates foreign trade from home trade. There is always cost of transport in the home trade, and the cost of transport in the home trade between Aberdeen and London is considerably greater than that in the foreign trade between Dover and Calais. The real reason why there is a theory of international values distinct from the theory of home values is that labour and capital flow much less readily between country and country than between different parts of the same country. It is because of the ready transference of labour and capital, in the long run, from industry to industry in any one country that things tend to exchange for one another in the home trade in proportion to their real costs of production. For instance, if the supply of any article produced at home is short, the article will realize a price above its cost of production. But then wages and profits in the industry in question will rise, and labour and capital will consequently be attracted, until profits and wages come down to the normal level again, and the thing sells for its cost of production when wages and profits (including interest on capital) are normal. It is because flows of labour and capital are retarded internationally that things do not exchange in the foreign trade in proportion to their real costs of production. We must say "real costs" since, in the absence of tariff charges, things do exchange

internationally in proportion to their money costs ; but these money costs cover quite different real costs, owing to the different levels of earnings in different countries. To sum up, as regards the relations between the theory of home exchange and the theory of foreign exchange, we may say that the two have a common basis, but the former has to take account in addition of these flows of labour and capital. It is in consequence of these, as we have seen and will realize more fully later, that the first rates of exchange between commodities reached in the home trade are corrected until all the rates are roughly proportional to real costs. ~~The theory of international exchange, then, holds apart from cost of transport to markets ;~~ and there are certain conveniences in disregarding this cost of transport in expounding the theory. But if it is thought a violent procedure to suppose that carriage to consumers costs nothing, we can simplify the problem equally well, without altering its character, by reckoning all costs of transport in cost of production.

International immobility of labour and capital.—Workmen are unwilling to emigrate to foreign lands because they do not like to be severed from their fellow country-men, ~~and few people can adapt themselves to the manners and customs of a foreign people,~~ which are strange to them. The Englishman wants to remain an Englishman for reasons that are hard to express, and also because he finds it pleasanter to live under the social conditions which governed his upbringing and to which he has grown accustomed. Some races are much more adaptable than others, but, generally speaking, ~~people cling to their national homes like limpets to rocks,~~ whatever their race. Again, there are the difficulties of learning new languages, which act as further checks on the migrations of labour between places where different languages are spoken. It is true that many of these objections do not apply to emigrating to the colonies of one's own country ; and

that when a community has originated from another, as the United States has from England, so that there is some identity of racial characteristics and a sharing in a common past, the two communities are not felt as foreign to one another in any very high degree; but, nevertheless, among the great majority, there is a disinclination to leave home, though the number of Englishmen who go abroad out of a sheer spirit of adventure is absolutely large.

~~Internationally, capital is not so immobile as labour, but it is comparatively immobile nevertheless.~~ Many capitalists are unwilling to place their money where they cannot watch its use, and under laws and customs with which they are unfamiliar. But they do not feel the same about investing in foreign public funds. Consequently "international securities," which consist largely in public stock, and are so called because they have a world-wide reputation, play some part, though a small one, in the distribution of capital throughout the world's industries. They serve in a slight degree as international reservoirs of capital. Suppose that in France the yield of first-class industrial stock rises from 4 to 5 per cent while the yield of public stock keeps constant at $3\frac{1}{2}$ per cent. Then, it may be, little capital will be drawn into French industries from England, where we assume industrial interest to be less. But some money will come out of the French funds to enter the French industries; the yield of the French funds will, therefore, be raised; and English money will consequently flow into the French funds, and liberate more French money for investment in French industries. Indirectly, then, as well as directly to some extent, the industries of a country are helped by international flows of capital; and international flows of capital have been greatly encouraged between certain nations by improved credit, the spread of information, and increased travel.

Permanent international trade starts when there are

differences between comparative values.—Broadly speaking, the existence of commerce between countries, the ratios of exchange between countries (that is international values), and the quantity of international business, are determined by the conditions which govern the *comparative values* of different things in each of the trading countries.

~~*Nations will not begin trading with one another to any extent unless comparative values differ.*~~ This doctrine will not at once carry conviction, nor even compel understanding ; it will not be superfluous, therefore, to show its application to a single simplified case. We shall imagine that there are two nations only, namely England and Belgium ; that there are two commodities only, apart from gold which is used as money, namely wheat and blankets ; that capital and labour are internationally immobile ; that there is no cost of carriage ; that all production is subject to constant returns ; and that both countries have the same kind of money. Before intercourse is opened let this be the state of affairs :—

England produces wheat at £1 a bushel.

„ „ blankets at £2 a bale.

Belgium produces wheat at £5 a bushel.

„ „ blankets at £10 a bale.

Now, if our doctrine be true, no enduring trade should result when intercourse is opened between England and Belgium, because the ratio of £1 to £2 is identical with that of £5 to £10. Trade will begin, but will soon come to an end. Consider in detail what happens. England clearly will export goods and import nothing but money (gold bullion). The level of prices will, therefore, rise in England and fall in Belgium (see Chapter XX). Finally blankets and wheat will cost respectively £3 and £6, say, in both Belgium and England. Then trade must cease, because neither Belgium nor England would gain thereafter from exporting either wheat or blankets. It is, therefore, demonstrated that if the ratios between the

costs of production in any two lands are identical (that is if their comparative values are identical), enduring commerce between them of any magnitude is impossible, in the sense that nothing is to be gained from it.

It is also demonstrated that a country does not necessarily export an article to another country if it can make the article with substantially less labour or less capital, other things being equal, in each case, than the other country. And we may go even further and infer that a country may be beaten in its home markets by goods from abroad which it can manufacture for itself at a lower real cost, incredible as it may appear. England might possess exceptional advantages for the manufacture of steel, with which Belgian facilities in the same respect could not compare, and yet English steel might be undersold in England by Belgian steel. This could happen because England might enjoy even greater relative advantages for the manufacture of cottons. These she would export to Belgium, and Belgium, having to pay in something, might find it most convenient to pay in steel.

Next suppose that the initial state of affairs is different. Take it that these are the facts :—

England produces wheat at £1 per unit.

„ „ blankets at £1 „ „

Belgium produces wheat at £5 „ „

„ „ blankets at £10 „ „

Then for a time, as before, Belgium imports both wheat and blankets. But the time comes, as a result of the passage of money between Belgium and England, when wheat stands at £2, say, in both countries, blankets costing £2 in England and £4 in Belgium. Then the indifference point is reached as regards the export of wheat, though England's export of blankets must increase; and, presently, as the transference of money continues, wheat will be costing more than £2 in England, but less than £2 in Belgium. Thereafter,

in consequence, it pays Belgium to export wheat. Here at last are the conditions of enduring trade. ~~Thus we discover that enduring trade is set on foot by international differences between the ratios which the costs of production of commodities bear to one another.~~ If any commodity traded in cannot be produced at all in one of the countries, we may say that its cost of production in that country is infinity.

International values.—We have learnt from these examples when lasting commerce may be expected and when it may not, but we have not yet learnt what its amount will be, and what the rates of international exchange will be. The settlement of these matters is more difficult to understand, but it can be explained in a general way without the aid of mathematical symbols.

Let us confine our argument to the simple case in which there are two nations only, England and Belgium, and only two commodities, wheat and blankets, but let us remove the assumption that all production must be subject to constant returns. Then, looking at what tends to happen as trade goes on, we perceive that at the position of equilibrium *comparative values must be identical in the two countries*. This follows from the proof already given that if comparative values differ, it will pay traders in either England or Belgium, or both, and cannot damage traders in either, to extend operations, or contract them, until comparative values are the same in both countries. When the two countries begin to trade the relation between comparative costs in the two countries begins to alter, if the production of both commodities in both countries is not subject to constant costs; for a country increases its output of what it exports and decreases its output of what it imports. An alteration in the relation between comparative costs, brought about by foreign trade, may of itself be sufficient to cause eventual identity of comparative

values. If it is not, or if the production of both commodities in both places is subject to constant costs, the production of one commodity in one of the countries, say of wheat in England, will cease, after trade has reached a certain annual magnitude, and the value of wheat in England will then steadily fall as trade expands and England imports more and more of it. If, still, comparative values are not brought to identity, the production of blankets in Belgium will stop, Belgium's imports of blankets being such in amount that home manufacturers cannot profitably put any on the market. When this happens and commerce still expands, a position of equilibrium, in which the comparative values of wheat and blankets in England and Belgium are identical, must finally be reached.

Complicate the imagery by admitting all the countries of the world instead of two only, by supposing that traders in each try to get on the lowest terms what their customers want, and by recognizing the multitudes of commodities with which our needs are satisfied and the conditions of their supply, and there is presented the intricate problem of international values as it actually is ; but the principles brought out in our simple hypothetical exposition above still apply. In this connexion, it is worth while noting how very seldom it happens that the production of anything is confined to one country alone. If England exports a commodity to France which is not produced in France, it will usually happen that some third country, with which both England and France trade, will produce it also. The cases of national monopoly are rare ; almost always the exporter has to compete in the market of a foreign country with the home products of that country or with the products from a third country. Again, the introduction of cost of carriage and import and export duties (commonly called tariffs) makes the problem more involved but does not alter its character. To be quite exact, we must say

that the values referred to are values after cost of carriage to consumers and tariffs, if there are any, have been allowed for. As regards the special case of foreign commerce known as "dumping," this has already been examined (pp. 185-8), and the reader is in a position to decide for himself the extent to which the principles of international trade here expounded apply to it.

It is an interesting corollary from this demonstration that a people's foreign trade *may* decline in consequence of their economic advance, though it is not likely to do so. Thus, imagine a fictitious labour-capital unit which measures productive efficiency, and suppose the real costs of production in our two countries are as indicated below when there is no trade:—

Belgium produces 1 blanket	with 10 labour-capital units.
„ „ 2 bushels of wheat	„ „ „
England produces 3 blankets	„ „ „
„ „ 3 bushels of wheat	„ „ „

Then Belgium will export wheat to England and England will pay in blankets. Now suppose that industrial advance, mainly affecting agriculture, takes place in England, with the result that eight bushels of wheat can be grown with the expenditure of ten labour-capital units and four blankets can be manufactured at the same real cost. What will be the effect? Clearly, Belgium's trade with England must entirely cease, as soon as industrial organization has accommodated itself to the new conditions. Yet England who has lost her commerce has really progressed.

To sum up, as regards the place of comparative values in the theory of international trade, we see that comparative values initiate foreign commerce, govern its course, and determine its range; for foreign trade (1) begins only when there are differences between comparative values, internationally, and (2) is brought to a position of equilibrium when

these differences are removed as a result of trade. The famous *doctrine of comparative costs*, or the *doctrine of comparative values*, as it may be called, to make it unambiguously cover importations by a country of things that it cannot produce, or must cease to produce, is sometimes interpreted widely as affirming both propositions (1) and (2) above but sometimes narrowly as affirming only the former.

The balance of trade.—With the demonstration of the doctrine of comparative values, however, we have not completed the theory of international exchange. For, obviously, the final arrangements must, in addition, be such that international obligations balance. This is sometimes expressed by saying that imports and exports must balance, but so expressed it is literally untrue. What is really meant is that, when every sort of service performed for payment is taken into account, imports and exports must approximately balance in any lengthy period such as a year, in so far as they do not represent gifts, loans, and interest on loans. Time is, of course, needed for the balance, so as to reduce the error caused by the inclusion of a purchase and the exclusion of payment for it. No proof is needed of the necessity of the balance referred to. It is self-evident that in the long run imports must pay and just pay for exports when all goods and services, apart from gifts, loans, and interest on loans, are included, if people do not fail to meet their current obligations. For to say this is the same as saying that in the long run a person's expenditure must equal the value of the goods that he gets, apart from gifts, loans, and interest on loans, if he does not fail to pay his bills. But, naturally, the value of what a person buys or hires any one year need not equal the payments that he makes in that year, because of the existence of credit. Under a strict system of cash on delivery there would, however, be exact correspondence at all times between receipts in goods and payments for them. Credit, we may

appropriately regard in this simile as a loan made by shop-keepers to their customers. The loan is repaid when customers pay their bills.

The omission of gifts, loans, and interest on loans is clearly essential, if imports and exports are to balance. Gifts, of course, are not paid for, and they come into a country for the relatives and friends of persons who are abroad. Most of the gifts may take the form of money, but the money is spent on goods, and the country which has sent the money must ultimately meet the obligations represented by the money and export goods of like value. Debts must be excluded because they may not be repaid for many years, if they are repaid at all; and interest must be excluded because it is a sort of hiring charge for what has been loaned and has to be paid till the loan is repaid.

But, even when allowance is made for gifts, loans, and interest on loans, we must not, of course, expect correspondence in the long run between those imports and exports which officials can watch and record in statistics. To expect this would be as unreasonable as to expect correspondence between a person's expenditure and the tangible things that are seen going into his house. In foreign intercourse there are officially unrecorded goods and services. The officially unrecorded goods and services provided for Frenchmen, say, by foreign countries are as follows :—

(1) Unrecorded valuables which enter France by post.

(2) The goods and services which are not directly imported but are provided for Frenchmen abroad. The balance of trade means the balance of economic obligations conferred by different nations, through their members, upon one another. The Frenchman on a visit to London is still a constituent part of the French nation. Again, there is the provisioning of French ships abroad.

(3) Services done for France which are not recorded in

the statistics of things imported by France—for example, the sea-carriage done by English ships for French account, and any agency and financial work done in a foreign country for French account.

We may notice, with reference to the large balance of imports in English trade, that England has enormous investments abroad and that she earns a fortune annually for agency and financial work and shipping services.

It has been argued that, apart from gifts, imports and exports must balance because claims should be put into the balance sheet. Thus, if France makes a loan to Japan, France exports credit documents (money, broadly regarded, which was borrowed to be spent and becomes goods when it is spent) and receives in return bonds of equal value stating the amount of the debt. The bonds, it is said, should be included in French imports. And, when interest is paid on the loan, credit documents enter France (to become ultimately, as the loan became, merchandise or services) and discharges or receipts of equal value go out. These discharges or receipts, it is said, should be included in French exports. Whether this view is taken or not is a matter of indifference.

The term "*invisible imports and exports*" is used to cover (1) all goods and services provided internationally which are not recorded in official trade returns, and sometimes in addition (2) all credit documents, bonds, and claims which pass between countries. *Invisible imports and exports* are not designated "invisible" because they cannot be seen, but because they are not recorded in official trade returns. Many of them can be seen and felt, even eaten or worn, as we have discerned.

Effects of foreign loans on imports and exports.—A few words may be said here of the effects of foreign loans, to prove that we are right in regarding a loan made to a foreign Government, or a foreign business, as a loan of goods. The

loan is first made in money, broadly regarded, but the money is borrowed to be spent. Suppose, as a simple illustrative case, that people in England invest £1,000,000 in Australian industries, thereby lending, as we may say, £1,000,000 to Australia. Then the level of prices will be raised in Australia, not to be restored to the normal level till the extra purchasing-power is lost by Australia, as it must be eventually to pay for the balance of imports brought about by the high level of prices. The additional imports may come from anywhere. But if they come from any other country than England, that other country will be so placed with its extra means that it, too, attracts additional imports. Finally, the normal level of the world's prices is restored by an extra exportation of £1,000,000 of goods from England. Until this happens, England's exports are encouraged, while her imports are discouraged, by her low level of prices after loaning £1,000,000. In effect, then, England has lent Australia, directly or indirectly, £1,000,000 worth of goods. When the loan is repaid, if it is ever repaid, it is repaid in goods,—not, of course, in the same goods, but in other goods of the same value. A similar portrayal of interest payments would reveal that they, too, are in effect payments in goods made directly or indirectly through the medium of money. The argument will become more convincing to the reader after he has studied the chapters on money which follow.

The economic advantages of foreign trade are patent; and so are the general social advantages which result as a rule from foreign intercourse. What, if any, countervailing economic or social disadvantages there may be, which call for State restraints on trade, we shall consider in Chapter XXX.

Diagrammatic representation.—Those who seek more exact ideas should consider fig. 14, ignoring at first the dotted lines. Quantities of blankets are measured along OX and quantities

of wheat along OY. Let the curve B represent England's offer of blankets to Belgium for wheat. Let the curve A represent Belgium's offer of wheat to England for blankets. The position of equilibrium is given by the intersection of the curves. At the position of equilibrium England will export Oh of blankets to Belgium, and Belgium will export to England to pay for the blankets Og of wheat. The ratio of exchange between blankets and wheat in both England and Belgium will be given by the equation,

Value of Og of wheat = value of Oh of blankets.

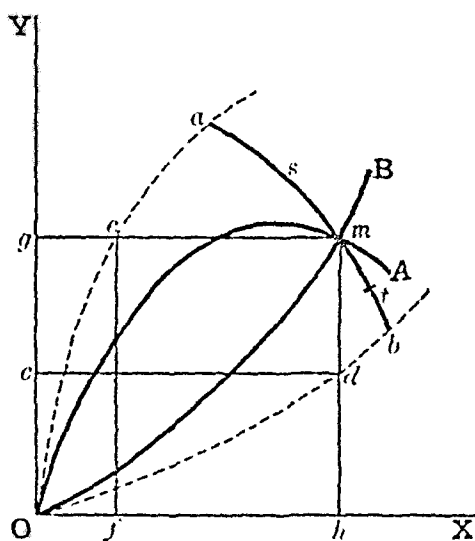


FIG 14.

We have, of course, ignored cost of transport, and all other countries, and all other commodities.

In order to make plain what exactly each curve means, we must now examine the information which the point m on the curve B conveys. If at the position of equilibrium England is still producing some wheat as well as blankets, the point m means that when England has produced Oh of blankets, over and above what she needs for herself, and has produced what wheat she requires after importing Og of wheat, then

$$\frac{\text{marginal cost of production of wheat in England}}{\text{marginal cost of production of blankets in England}} = \frac{Oh}{Og}$$

But if at the position of equilibrium England has ceased to pro-

duce any wheat, the point *m* means that when England has produced *Oh* of blankets, over and above what she needs for herself, and has imported *Og* of wheat, then

$$\frac{\text{value of wheat in England}}{\text{marginal cost of production of blankets in England}} = \frac{Oh}{Og}$$

In this case there is no marginal cost of production of wheat in England as it is not produced there. Of course, the value of blankets in England will equal their marginal cost of production there.

Each point on the curve *B* has to be similarly interpreted. And the curve *A* has a corresponding meaning. These curves would seem to be packed as full of information as Lord Burleigh's nod in Sheridan's "Critic".

The reader may be left to decide for himself, after considering the possible conditions of demand and supply in the two countries, what are the possible and likely shapes for the curves *A* and *B*. This hint may be given, however, that the curves may intersect more than once, and that consequently, as in the home trade, so in the foreign trade, multiple positions of equilibrium are possible, and a position of equilibrium may be completely stable, partially stable, or completely unstable. Moreover, with the curves *A* and *B* drawn as they are, other positions of equilibrium, such as *a*, *s*, *t*, and *b* on the contract curve *ab* are possible, if successive exchanges do not take place at the same rate (see pp. 154-5).

Finally, a method may be shown of exhibiting on this diagram the gain resulting from the foreign trade, and its distribution. Let *Ob* be England's indifference curve (see p. 155), that is a curve representing the exchanges which would leave England neither gaining nor losing from the trade. Then at the position of equilibrium England's gain from the trade would be the value of *md* of wheat. If she gave *Oh* of blankets for *hd* of wheat, she would neither gain nor lose, but, as she gets *hd + md* of wheat for her exports of *Oh* of blankets, she gains *md* of wheat. If *Oe* is Belgium's indifference curve, she gains from the trade the value of *em* of blankets. In certain very unlikely circumstances, the curve *B*, or a part of it, might be beneath *Od*; or the curve *A*, or some part of it, might be to the left of *Oa*: which would mean that a country might lose on its foreign trade (see pp. 423-4).

BOOK V.

MONEY AND THE MECHANISM OF EXCHANGE.

CHAPTER XX.

THE THEORY OF MONEY.

FEW human errors in the past in the economic field have been more mischievous than those arising from false theories of money. Yet the subject presents no very formidable difficulties, if it is properly approached. The best approach to an understanding of the uses of money, its functioning, and the determination of its value, is by way of its evolution. I do not mean that we should trace the history of money from age to age, though from so doing a great deal that is of practical importance, and a great deal which throws light on the evolution of money, might be learnt; but that we should begin with the simplest imaginable use of money and follow the logical order of development in its use, which is not necessarily the historical order.

Inconveniences of barter and emergence of money.—Money originated logically in the inconvenience of barter. As, in course of time, members of a community become more and more dependent upon one another economically, the quantity of exchanging which must take place between them increases. In a simple subsistence economy—that is in a social state in which each family produces all or most that it wants—the

amount of exchanging effected is insignificant. Social development implies a growing dependence of person on person economically; and long before the amount of necessary exchanging involved in this economic dependence becomes at all considerable, the inconveniences of barter become intolerable.

The fundamental inconvenience of barter arises from the fact that, for each act of barter, a double coincidence of wants is a prerequisite. If I have sandals to barter, I must find a person who not only wants sandals but also possesses what I require, say, turbans. Endless time may be spent in seeking such persons, and the chances are that I shall have to give up the quest and rest satisfied when I can sell my sandals for any articles which come within measurable distance of what I want. And I may, in addition, have to sell at an unfavourable rate of exchange, because I may not succeed in discovering a person who cares much for sandals among those who have at all what I require. And those who take my sandals may equally have to put up with a second-best satisfaction of their wants. In the circumstances, they and I may esteem ourselves fortunate in not having failed utterly to attain our ends at a reasonable cost.

The enormous difficulty of getting satisfactory results out of bartering will be still further appreciated when we dwell upon the awkwardness, under that system, of accommodating units of sales to units of purchases. If a grazier requires numerous small articles, his task in marketing by barter is almost impossible of performance, even with the utmost patience. With a sheep he would be able to purchase a great deal, but unless he divided up the sheep he would have to find somebody who both required a sheep and possessed, or would get for him by yet further processes of this vexatious bartering, the multitude of small articles to obtain which he was ready to sacrifice his sheep.

With these fundamental defects of the system of bartering,

others are connected. The chief of the latter arises from the fact that bartering does not naturally provide a common denominator of value, so that the values of different things may be known and compared. Under barter, every commodity is exchanged directly for a multitude of different things. Knowing the value of wheat, say, means knowing how many spades a bushel of wheat will purchase, how many fowls, how many blankets, and so on to the end of the catalogue of the exchangeable things which exist. Were the wheat always bought with iron, in a short time a regular market price of wheat in terms of iron would become settled and recognized; and individuals who wanted to buy or sell wheat would, therefore, be furnished with an index, by reference to which they could decide whether they were offering, or being offered, as the case might be, a reasonable price. Under the rule of barter, on the contrary, endless higgling over every purchase must inevitably occur, and an immense amount of time must be wasted in consequence.

The impossibility of doing business speedily and satisfactorily by means of barter constrains people to sell things for some other thing which they do not require in the hopes of selling the latter again for what they do require. When any commodity is made to render an indirect service in this way, it is being employed as money, in the broadest sense of the term, that is, as a medium of exchange.

We can imagine that, as a result of a sort of natural selection, certain articles are promoted to serve the purpose of media of exchange. The fittest for the purpose survive and get established as the customary media of exchange. In this process of survival the application of money to purposes other than effecting exchanges plays a determining part. The medium of exchange is naturally singled out to store up value, unless it is obviously unsuitable for that purpose. Money which can be kept for long periods without fear of its losing

in value, is, therefore, found preferable to money which cannot.

Choice of the money commodity.—It is easy to perceive for the possession of what qualities an article would be chosen for money. To be moderately convenient, the money commodity must be characterized by the possession of the following leading attributes :—

(1) *General acceptability* (if we may call this an attribute). The article must be in common demand in the initial stages of the development of money, because otherwise it would not be easy to make purchases with it.

(2) *Transportability*—because the medium of exchange has to be carried about, or driven about, to do its work as money. Transportability involves that money should contain in a convenient bulk and weight an amount of value which is reasonable in view of the wealth of the community. Other things being equal, the more rapidly the medium of exchange can be transported, and the less the trouble occasioned, the better.

(3) *Cognoscibility and homogeneity*.—The article must be readily recognizable for what it is, so that persons accepting it may not be deceived easily. This requisite implies *homogeneity*, that is, that the article should not exist in a multitude of qualities.

(4) *Divisibility*.—This is a quality which is practically, though not logically, essential. Divisibility here means that the article can be divided up without losing in value. Much value is destroyed when precious stones are broken up, but little, if any, value is destroyed when metals are broken up. It is evidently an advantage for money to be furnished in small and large units. If there existed precious stones of a certain kind, of which there were always just the most appropriate supplies of all sizes, they would serve famously as money, provided that the value of a stone bore a constant relation to its size. But the relation between the value and

weight of precious stones of any kind cannot be a fixed one. For they differ in quality, and the demand for and supply of stones of any given size vary from time to time; and increased demand for the smaller stones cannot be met, without loss, by breaking up larger ones, and increased demand for larger stones by fastening smaller ones together. We may, therefore, agree that divisibility, in the sense given to it above, is essential.

(5) *Durability, including compactness.*—The money commodity must be comparatively imperishable, because, if I take it in exchange for my goods, I may have to retain it for some time before using it to make purchases. Again, it must be of a convenient bulk for storage, and not require constant attention like flocks and herds.

(6) *Fixity of value.*—The money commodity must be fairly constant in value, as otherwise loss may be incurred through accepting it.

Metals, and particularly the more precious metals, are admirably endowed with the qualities enumerated above. They are widely acceptable, recognized without difficulty, divisible without loss of value, easily transportable, comparatively imperishable, easily stored, and, finally, more constant in value than the majority of other things. The comparative immunity of the precious metals from oscillations in value is, to some extent, the result of their comparative imperishability over long periods. Considerable parts of the stocks in use to-day were mined in the more or less remote past. The more precious the metal, other things being equal, the larger is the proportion of the supply which is inherited from early times; for the more precious the metal the more carefully is it preserved. Because of the continued existence of accumulations, variableness in the amount of gold mined from year to year exerts less influence on the value of gold than it would other-

wise. It is true that the annual supply of a precious metal cannot in the present—and could even less in the past—be accommodated to fluctuations in demand; but this is a matter of little moment when the demand for the metal in question is not subject to substantial fluctuations. A steady appreciation or depreciation of the value of a money metal is less troublesome than irregular variation in its value, because the former can be allowed for, whereas the latter cannot.

The final choice of a metal or group of metals to serve as money depends upon the wealth of the community, and must depend upon it if the only or the chief circulating money is the money metal. Gold would be too valuable as a standard in early stages of civilization, for the value of the normal unit of purchase in early stages of civilization is so low that the coins in commonest use if formed of gold would need to be absurdly tiny. If a man's income expressed in gold is only one pennyweight of gold per week, his buying in terms of gold would plainly be out of the question. Imagine the attempted division of a pennyweight of gold into fifty, or even twenty, equal parts. Similarly, copper is certainly not of sufficient rarity to serve as the standard of value for Western civilization at the present time. Imagine the loads of copper that would have to be carried about, under existing monetary conditions, if there were no coins of a more precious metal.

Determination of the value of money.—Though gold is almost certainly out of the question when money is being adopted under primitive conditions, we had better suppose, nevertheless, that gold is the metal chosen. It is desirable to suppose this because, in dealing with the use of money in an imaginary world of primitive conditions, our main purpose is really to solve the monetary problems of more advanced conditions. And, under the most advanced conditions, gold is invariably found to be the standard of value. Assuming, then, that all money is gold money, let us suppose further

that the standard coin is an ounce of gold of a given fineness. Smaller coins may be allowed to exist, but let us indicate the quantity and value of money in terms of this coin, and designate it the *money-ounce*. And let us assume, in addition, that bullion can be turned into money-ounces, and the latter into bullion, at the will of the possessor.

The most fundamental proposition connected with the theory of money declares that *the exchange value of these coins, as money (that is what they will purchase), must equal their exchange value as a commodity*. Though gold be chosen for money, it still remains a commodity which has value as a commodity. That is to say, our money-ounce must buy just one ounce of gold. If it would buy more than an ounce of gold, people would melt down some of their gold ornaments and works of art to use as money, and devote less gold in the future to the arts and jewellery. They would do this, which we suppose to be possible, because their gold would have higher value in the form of money-ounces than in other forms. Correspondingly, if a money-ounce would buy less than an ounce of gold, it would pay to transform some money-ounces into ornaments and works of art—and we premise that this is possible. So, to put the generalization subjectively, in terms of our imaginary case, the marginal utility of a money-ounce to a person (that is the marginal utility of anything that it purchases for him) must equal the marginal utility of an ounce of gold to him, if he possesses any gold in forms other than money-ounces.

The equation established, however, will not alone solve the problem of the value of money. We have shown that the purchasing power of a money-ounce must equal the exchange value of an ounce of gold—that is to say, we have shown that gold must be so distributed between money and commodity uses that this equation holds—and we know that the exchange value of gold as a commodity varies inversely though not

necessarily in the same ratio as its quantity ; but we have yet to show how purchasing power is connected with the supply of money-ounces.

Let us take for granted that all exchanging is conducted with money-ounces, that no credit is given, and that no money-ounces are saved up. Then the quantity of exchanging to be done over a given period must be one determinant of the purchasing power of money. The quantity of money must be another, and the frequency with which it changes hands, in effecting exchanges over the given period, must be another. The frequency with which money changes hands in a given time to make purchases is called its "*rapidity of circulation*" or "*velocity of circulation*," and there is no difficulty in conceiving of the *average* rapidity of circulation of money as a whole. By "quantity of exchanging to be done" is meant the sum of the values of the exchanges effected, expressed as a multiple of the price of some article. Thus, taking the price of a peck of wheat as the unit, the sale of a peck of wheat counts as one unit of exchange, and the sale of a horse, when a horse is worth 1000 pecks of wheat, counts as 1000 units of exchange.

The solution of the problem of the purchasing power of money, then, as so far expounded, is as follows. (a) *The quantity of exchanging to be done, in a year, say, divided by a figure obtained by multiplying the number of money-ounces in use by their average rapidity of circulation in a year, yields the purchasing power of the money-ounce, when there are the supposed number of money-ounces in use.* This must be so because, on the assumptions made, the money-ounces must buy up, and just buy up, the goods offered for sale in the period. (b) *Gold will be so distributed between money and commodity uses that the purchasing power of the money-ounce will equal the exchange value of the ounce of gold.* Any necessary allowance, of course, can easily be made for hoarding.

We may bring our exposition a stage nearer reality by taking *credit* into account. The bulk of the exchanging in the modern world is effected by means of credit. The credit instruments embrace notes, cheques, bills of exchange, and token money. We shall consider later in more detail the characteristics of these several instruments ; now we simply note their bearing on the purchasing power of money. Evidently, the effect of the appearance of credit money will be to increase the media of exchange, lower the purchasing power of money, drive gold from the currency into the arts, and depress the marginal utility of gold. The quantity of gold driven out of the currency could not possibly be as great as the quantity of credit money introduced, because the purchasing-power of gold money and the exchange value of gold must be equal, and the latter would begin to fall as soon as any gold excluded from the currency reached the bullion market.

The theory of money just expounded is sometimes known as the *quantity theory of money*, but it need not be so termed since there is no other plausible theory to distinguish it from. It is sufficient to describe it as *the theory of money*. Sometimes the title "quantity theory of money" is reserved to indicate the views of those who maintain that the value of money varies inversely, and in the same degree, as the quantity of the money-metal in use as money, because, as they contend, the quantity of credit money bears a fixed relation to the quantity of money-metal in use as money for any given state of trade.

Finally, to complete our theory we must allow for *the supply of gold*. It is sufficient to say that gold when mined will be mined in such quantities that its supply price per ounce will tend to equal a money-ounce. If its supply price could not be made as low as a money-ounce at any time, it would not be mined. The amount of gold produced each year is obviously governed *inter alia* by the rate at which the existing stock wears out.

The reader will now perceive that the theory of money fits into the ordinary theory of the determination of the value of things by demand and supply.

Symbolic and diagrammatic expression of the theory of the value of money.—Using symbols, we may put our first results as follows. Let

P = purchasing power (that is value) of a money-ounce.

T = trade, i.e. quantity of exchanging to be done, in a year.

M = quantity of money-ounces.

V = velocity of circulation of money-ounces.

That is to say, the money work to be done is T, and the money power to do the work is $M \times V$. Hence, inasmuch as the money power is only there to do the money work—that is to say, the money power must be used up in doing the money work—the value of money is given by the following equation:—

$$P = \frac{T}{MV}$$

The magnitude of M is determined (1) by the supply of ; and (2) its distribution between money-ounces and the arts. distribution between money-ounces and the arts is given by following equation:—

$$P = G$$

when G = the exchange value of an ounce of gold bullion.

To allow for credit money, write

M' = credit money.

V' = its velocity of circulation.

Then our first equation becomes

$$P = \frac{T}{MV + M'V'}$$

If for a given state of trade $M + M'$ bears a constant relation, K, to M, and v is the average rapidity of circulation of $M + M'$, then KMv may be written for $MV + M'V'$ in the above equation.

Finally we must add to our equations

$$S = P$$

if S is the marginal supply price of an ounce of gold.

To express the settlement of the value of money by means of demand and supply curves, fig. 15 has been constructed. Pecks of

wheat are measured along OX and ounces of gold along OY. The curve D_2 , which represents the different quantities of wheat for which a money-ounce would exchange when there were different quantities of money-ounces, is the demand for gold as money in terms of wheat. D_1 is the demand for gold in the arts, and gives the exchange value in wheat of gold in the arts when there are different quantities of gold in the arts. D , which is compounded of D_1 and D_2 , is therefore the total demand for gold stated in terms of wheat.

Assume that the stock of gold after a year would be reduced 25 per cent in consequence of wastage, if the stock were not renewed. Assume also (1) that demands are rigid and have been for some time,

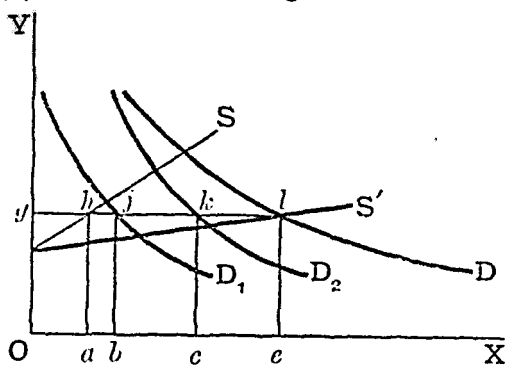


FIG. 15.

and (2) that the conditions of supply of gold are the same from year to year and have not altered for some time. Let S be the supply curve relating to gold. Let S' be a curve obtained by multiplying the abscissae of the curve S by the ratio of 100 to the rate of wastage of gold (that is by $\frac{100}{25} = 4$); so that S' is S pulled out fourfold to the right, so to speak. Draw gl through l (where S' and D intersect) parallel to OX .

Then, at the position of equilibrium,

Oe of gold is regularly in use.

Oc of gold is used as money.

$O'b = ce$ = quantity of gold used in arts.

$\frac{Oe}{4} = Oa$ = wastage of gold by wear and tear each year.

Oa = amount of gold produced annually.

The distribution of the annual supply Oa between the arts and money depends (on the assumption made) upon the relative wastage of gold in each.

Observe the following points which are deducible from the above argument. If the wastage of gold increased, or the supply price of gold fell, there would ultimately be a settlement at a new position of equilibrium. In the former case, the annual supply of gold would be greater but the amount in use would be less. Exactly the opposite consequences would follow from reduced wastage. A fall in the supply price of gold would mean more gold in use and larger annual supplies.

Functions of money summarized.—Money serves not merely (1) as a medium of exchange, which is its most important use, but also (2) as a standard of value, (3) as a store of value, and (4) as a common denominator of value. In effecting exchanges it is *ipso facto* constituted a common denominator of value; and in thus rendering the values of all things comparable with one another, money fulfils one of its most important functions (see p. 18). It is merely convenience which causes money to be used as a store of value. We could as easily store precious stones. As regards the standard of value, we must observe that this need not circulate; it is sufficient if representatives of it circulate. This is discussed in the sections on paper money which follow.

Appreciation and depreciation of money.—Money is said to *appreciate* when its purchasing power rises and to *depreciate* when its purchasing power falls. By the foregoing it has been proved that, if the quantity of money remains fixed, an increased supply of commodities (including all purchasable things) causes an appreciation of money, and a decreased supply of commodities a depreciation of money. Likewise, if the quantity of commodities remains fixed, an increase of money causes depreciation of money and a decrease of money appreciation of money. The latter proposition is sometimes expressed quantitatively in technical language by

saying that the *elasticity of demand for money is unity* (see pp. 42-4). For, whatever the quantity of money in use, about the same amount of exchanging will be done, since the supply of money may be regarded as not affecting the supply of commodities. Hence, to take two examples, if the quantity of money doubles, its purchasing power per unit falls 50 per cent, and if the quantity of money is halved, its purchasing power per unit doubles. That is to say, the demand for money has elasticity unity. We have assumed in this paragraph that an alteration in the supply of commodities, however it may be measured, is accompanied by an exactly corresponding alteration in the amount of exchanging to be done, the method of computing which has been already described on page 213.

The terms "appreciation" and "depreciation" (of money) are sometimes confined to ascents and descents of purchasing power due to causes affecting the supply of money. But this limited application of the terms "appreciation" and "depreciation" with reference to money is uncommon, and it would be best, therefore, to avoid it. If we wish to allude to the effect on prices of purely monetary influences, we can speak of the appreciation or depreciation of money caused by variations of monetary power.

Are rising, falling, or steady prices best?—A fall in general prices the degree of which corresponds to the degree of general productive progress may have commendable features, because it means that the benefits of progress are disseminated throughout the community without readjustment, or frequent or considerable readjustment, of the distribution of money income, for instance without constant alteration in the rate of wages. A fall greater than this which involves reduced money wages is serious, however, because it is not likely to be understood generally that the purchasing power of earnings is rising though money earnings are falling. On the other hand, it may be contended that prices which fall in

any degree are undesirable, because they hide the gains which every section of the community is deriving from progress ; and it must be admitted that the uncertainty about the future which varying prices cause, and the certainty that falling prices will not fall in the ideal degree defined above, make it very unlikely that falling prices will be quite innocuous.

People who believe in making monetary arrangements which force up prices are known as *inflationists*. They think that climbing prices are necessarily good for trade. And admittedly a rise in prices which is due to a recovery of demand after a collapse (see Chapter XXIV) is good for trade. But a rise in prices which does not reflect any alteration in demand is apt to deceive the business world and bring about over-trading (see again Chapter XXIV). It is questionable, however, whether monetary arrangements which induced a long-enduring ascent of prices, and a steady one apart from trade cycles, would after a time have any direct stimulating effect at all, because the rise due to currency causes would be expected and allowed for. And if a community took measures to keep prices advancing at an appreciable rate, what the end would be the reader may judge.

Finally, attention may be drawn to the bearing of the appreciation and depreciation of money on loans. Whether it is desirable or not that the purchasing power of money should appreciate, so that the lender shares in the benefits of progress, it is quite certain that it is not desirable that it should depreciate if the depreciation is not foreseen. An elevation of prices would ease the burden of monetary obligations contracted when the rise was not foreseen, but at the expense of the creditors, who could reasonably complain of injustice if the rise had been brought about deliberately. This paragraph has a bearing on the proposal to settle the re-payments of loans by a tabular standard (see pp. 221-2).

Most persons of sober judgment who have studied the

question would, no doubt, agree that prices which neither rise nor fall in general, and are undisturbed by fluctuations, are best on the whole for a community. The reader may remind himself at this point of the observations on page 121.

Index numbers of prices.—The question naturally arises as to whether it is possible to measure variations in the purchasing power of money. At first blush it might seem impossible to do so because the price variations of different things are not likely to correspond with one another. We may, however, get over the difficulty by averaging. The average, of course, is nothing more than a conventional standard. Should the price of tea advance 50 per cent and the price of coffee fall 50 per cent, we may say that their prices, taken together, have neither risen nor fallen, if we agree to mean by this that the prices when counted together in a certain way in an average have neither risen nor fallen. It is found a great convenience to mean by the rise or fall of prices in general the rise or fall of some average. Figures indicating the periodic rise or fall of some average, determined in the manner stated below, are known as *index numbers of general prices*.

When we take prices as a whole, it is impossible to average them all, because the number of distinguishable sorts of commodities is legion if different qualities of the same commodity be taken separately. But we may select, from the totality of articles used in the world, a certain typical group of things and average the prices of these. If the group is properly typical, that is to say if it includes representatives of most classes of commodities, the probability is that the average price of the typical group will vary in practically the same way and degree as the average price of all commodities, which cannot be calculated. Commodities may be said to be of the same class when they are subjected to pretty much the same influences from the sides of both demand and supply.

The averaging may be effected in a variety of ways. We may take the arithmetic mean or the geometric mean, for example. Again, we may or may not *weight* our average, that is to say, attach a special importance to the price variations of certain commodities by multiplying their prices by certain numbers which are roughly proportional to the degree in which income is spent upon each of these

commodities. The arithmetic mean is usually good enough, and for general purposes weighting is found to be unnecessary if the typical group of commodities is well selected. In the various sets of general index numbers of prices which have been calculated, the number of commodities taken varies, but it is never less than about twenty.

We may now make a calculation of index numbers of a few commodities, so that there may be no misunderstanding of the manner in which index numbers are constructed. It must be remembered, however, that this is merely an example, and that the number of commodities used in the example is quite inadequate. The average employed is the arithmetic.

	1900—Each price written 100.	Percentage rise or fall of each price, as compared with the corresponding price in 1900, plus 100.			
		1901	1902	1903	1904
Tea . .	100	105	110	114	112
Wheat . .	100	98	97	99	95
Pig-iron . .	100	117	115	110	103
Cotton . .	100	102	98	104	97
Sugar . .	100	96	100	98	91
Coal . .	100	99	105	109	110
Total . .	600	617	625	634	608
Average . .	100	102·8	1·041	105·7	101·3

The index number is sometimes given as the total and sometimes as the average. In this case 1900 is the *standard year*, so called because the prices in all other years are expressed as percentages of prices in that year. The average price may be the average of prices at the end of each month, or each week, or at any selected intervals. If we liked, of course, we could construct monthly, or weekly, or even daily index numbers.

What is sometimes called regulating deferred payments by a

tabular standard of value means arranging that payments in the future shall represent agreed amounts of purchasing power as shown by some system of index numbers adopted for the purpose. Thus if the above table represents the adopted system and I borrowed £600 in 1900 for three years I should pay back £634 in 1903 apart from interest.

For special purposes it may be found desirable to construct *special sets of index numbers* of price movements. For instance, if we want to show variations in the purchasing power of working-class incomes, we must begin by drawing up a budget of average working-class expenditure, so that we may know how much of working-class income is spent on rent, how much on clothes, how much on bread, meat, coal, and so forth. This budget must be used in selecting our typical group of commodities, and in weighting our average to make allowance for the large percentage of income which is spent on certain articles.

The system of measurement by index numbers can be applied to things other than prices; index numbers of foreign trade, for instance, and of wages are largely used.

CHAPTER XXI.

THEORY OF BANKING AND CREDIT MONEY.

I SHALL attempt to expound the correct theory of the much misunderstood subjects of credit money and banking (which are inter-related) by the use, as in the previous chapter, of simple fanciful conditions. This artifice may seem over-abstract, but the adoption of any other would probably leave the reader without a clear conception of the principles by which credit money and banking are governed. A modern monetary system, including the banking in relation to it, is necessarily so involved that, in trying to follow a description of the system, the reader who is making his first acquaintance with it would be apt to lose grasp of the theory interwoven with the description, or to overlook the theory altogether, or even to misread it. Consequently, it is necessary to explain the fundamental doctrines of credit before proceeding to detailed facts as they are, which are easy enough to read when the light of analysis is thrown upon them. Nobody is likely to understand a complicated machine who has not made a preliminary study of the principles of mechanics.

Banking creates a loan fund.—Our fiction can be set out in a few words. We have already supposed in the previous chapter that a natural money (see p. 238), consisting in money-ounces of gold and fractional coins, is in use. To our preliminary supposition, we now add that the Government starts a banking business. This banking business accepts money on deposit, and derives a profit from its deposits by lending to

people engaged in business, or to Governments, or to others who have security to offer. There will be a fund to put out on loan, because ordinarily people will have bank balances. We still suppose that the only money is the natural money.

If a man is saving up at the bank, and intends when he has saved enough to invest his savings in industry, his balance at the bank will be left to accumulate until it has reached a certain figure, when it will be withdrawn. Now, as a lot of people will be saving in this way, *and all will not withdraw their savings to invest at the same time*, there must always be in the bank a large sum which represents the accumulating savings. Again, if a man is not saving but uses the bank for convenience, he will have to keep at the bank a working fund for his business and a reserve for expenditure, and his balance at the bank will only drop to zero in exceptional circumstances. In his balance and the similar balances of others, we have another source of loans. Were there no bank, the sum represented by the balances lying at the bank would be hoarded privately, because people would save up in the same way, and keep working funds to carry on their businesses and reserves for expenditure in the same way. We assume that the establishment of the bank would not affect the habits of the people in this respect. Some part of sums hoarded privately for the purposes mentioned could not be loaned because they have to be instantly available; but, if this part were banked on the understanding that it was to be instantly available, it could then contribute something to loans, as it is inconceivable that all such deposits would be withdrawn at the same moment.

The basis of the loaning which results from depositing in banks is identical with the basis of insurance. It is the aggregate uniformity that rules among individual uncertainties. Any one of a given thousand persons might meet with an accident in a given year. No one of them could be sure that

he would not be injured in that year, so each must make provision for mishaps which may never befall him. But, in spite of this complete uncertainty, it is practically certain that no more than, say, twenty of the 1000 will meet with an accident in the course of any one year. If the risks of all the 1000 are borne jointly, therefore, it will be sufficient for the group to make provision for twenty accidents in the course of the year instead of for 1000. This is what is done in effect by insurance companies. Similarly, when we turn our attention to the basis of bank loans, it becomes plain, to take one example, that if each individual must have, say, £20 immediately available, 1000 individuals need not have £20,000 at hand. In spite of each person's uncertainty about his possible need of money on the instant, it is quite certain that no more than £1000, say, will be wanted in the course of the year by the group of 1000 people. Hence, as regards this example, when people keep their money at the bank, the bank can lend a good part of the sums deposited with it, as we have seen.

How much may the bank lend?—How much of its deposits may the bank lend? Evidently just so much as will leave it with sufficient "till money" to meet the withdrawals of money by the public. For the moment we may ignore fluctuational movements in depositing money in banks and taking it back. Deposits flow in and out, there always being a margin, and loans flow in and out, and the latter must be accommodated to the former so that a safe margin of till money is always left.

To generalize roughly, we may say that if the banking habits of the people remain constant, and the national income remains constant, the bank will have a fund to invest which is equal to the smallest amount to which its balance of deposits drops in its ups and downs. Practically, however, it would not be safe to invest so much, because bank deposits might conceivably sink to an even lower level without a busi-

ness revolution ; and, even if they did not, the bank would be left with just nothing in its till when the bottom limit of deposits was touched. As a matter of fact, since deposits fluctuate seasonally, a bank can loan more at one time of the year than at another time, if a portion of the larger sum loaned is paid away for a very short period only.

The till money which the bank decides to keep is called its *banking reserve*. It must be distinguished from the *gold reserve*, which will be noticed later. In the simple case taken here, as there is no currency but gold, the whole of the banking reserve must be gold. But it will not be actually, for actually the currencies of countries with a gold standard contain notes and token money as well as gold coins.

It is very important to understand that most of the money lent by banks goes back into circulation, even the loan which is "locked up," as it is expressed, in building a factory or laying a line of railway. The gold itself does not become bricks for the factory, and railway embankments and tunnels. The gold is ultimately paid out as salaries, wages, rent, interest, and profits, even when it is used to buy articles like bricks and steel rails. It is always passed on to persons. So most of the money put into banks gets back into the pockets of the people.

Banks, in loaning, *trade in credit*. So far we have not supposed that the bank of our imaginary circumstances has tried to coin its credit, or, in more literal language, to issue notes. But it has made use of its credit in loaning some of its deposits. If its credit had been shaky—that is, if people's trust in the bank had not been firm—it would have run great risks in lending a high percentage of its deposits. At any moment distrust of the bank might have been generated and have spread, and large numbers of people might have demanded their deposits back again. What, then, could the bank have done but close its doors if it had passed the bulk of its deposits

on to borrowers who were not obliged and able to return the loans at once on demand? When a bank lends its deposits it is trading on its credit. Its credit is the fount of all its business. Hence the absolute necessity that a bank should take the most scrupulous care to preserve and foster its credit. Manufacturers and traders are put to great inconvenience when their credit is bad, but they may, nevertheless, get along somehow. But without credit a bank cannot get along anyhow. Banks which are not Government institutions lay their foundation of credit in large subscribed funds and in the reputations of those responsible for their direction, and aim at extending their credit by fair and prudent dealing.

A plausible fallacy.—We must now examine a fallacy that is sometimes met with ; and, in doing so, we may speak of sovereigns, instead of money-ounces as heretofore, so as to have a familiar term, while still preserving the fiction that no money other than gold coins is used, and that there is no foreign trade.

The argument to be scrutinized may be put in this way. Suppose a bank is opened and the money left deposited in it settles at £100,000. The bank, let us say, finds it safe to loan 90 per cent of its deposits. It therefore lends £90,000 (that is, 90 per cent of its deposits of £100,000). The £90,000 loaned is deposited. Of this new deposit of £90,000 it lends £81,000 (that is, 90 per cent), and the £81,000 lent is re-deposited. Of the new deposits of £81,000 it lends £72,900 (that is 90 per cent), and the £72,900 is deposited ; and so on. It can be calculated that the deposits at the bank which were £100,000 will become, through its loaning always 90 per cent of its deposits, £1,000,000—on the assumptions made. We have, then, as ultimate deposits ten times the original deposits ; and as we assume that 90 per cent of the deposits will be loaned, the loans will ultimately be £900,000. So, in this case, the bank would lend ultimately nine times as much as

its original deposits, according to the contention which we have to examine.

That such a result, or even the semblance of it, exists only in the imagination, can be proved, without specific recourse to facts, on the testimony of common sense. We have learnt in the section just preceding that the £90,000 loaned would tend sooner or later to figure as an access to money income. But as money income became ampler, general prices would ascend and gold would be expelled from the currency into the arts. Consequently, there would be a smaller supplement to money income than £90,000. Let £60,000 be added. Now, only a fraction of this would be deposited, and left on deposit, in the bank. The fraction would be about the proportion which the original level of deposits in the bank bore to the original level of money income—or this approximately—say, for argument's sake, one-quarter. Then the first fresh deposits, of which 90 per cent could be loaned, would be, not £90,000 as is presumed above, but merely one-quarter of £60,000, that is £15,000. Our figures, we must remember, are merely illustrative. We need not carry the arithmetic further, but we may observe, in conclusion, that as the loaning by the bank raises prices in the ratio in which its loans ultimately increase money income, and as its loaning rises in roughly the same proportion, the additional loaning which its first loaning renders possible makes absolutely no addition to the real value (that is, value in commodities) of the loaning done by it. The real value of its loan of £90,000, for instance, at the time that it was made, would be exactly the same as the real value of the sum out on loan at the time when the loan was increased to £90,000 + £15,000 in the manner described above. This theory of loaning is not altered in character by allowing for the institution of credit money, though it may seem to be so because credit money is largely brought into use through the loans made by banks.

Theory of credit money.—Of credit money there are many sorts (see pp. 235-6, 241), but, nevertheless, we shall begin our theorizing by postulating that it is confined to bank-notes. The credit of a bank can be made profitable otherwise than through the lending of its deposits. A bank may use its credit to float promissory notes and get them substituted to some extent for the metallic currency. We may call this *coining its credit*, because its credit becomes the basis for a kind of circulating money which does the same work up to a certain point as the currency.

Let us imagine that our bank suddenly realizes that the community which trusts it will be willing to accept promissory notes (that is bank-notes) of certain denominations in place of metallic money to some extent, and that by issuing such notes it may largely increase its available funds. Actually, no sudden discovery would need to be made, since the issue of notes could arise insensibly and gradually out of the bank's ordinary trading bills and receipts for deposits, which would have a high value, and might be traded in, and pass from hand to hand. Thus its credit could be informally coined before it issued any paper with the deliberate intention of keeping such paper circulating to economize its cash. What has really happened historically we need not now consider—the actual course of the evolution of banking is another story—but the logical order of thought followed in this chapter must not be allowed to create wrong impressions as to the nature and sequence of historical facts.

After a bank has embarked upon the policy of issuing notes, the urgent question arises as to the extent of its power to issue them. *What are the limits of a note issue?* In trying to answer this question let us assume provisionally that public confidence in the bank will remain unshaken so long as the bank meets the calls made upon it, and that there is no foreign trade. Then, a few moments' thought will suggest

the conclusion that, if the public feel no doubt about the security of the notes, *the note issue will be limited only by the habits of the people in respect of the relative uses which they make of notes and coin.* Coin is most convenient for some purposes and notes for others. It is possible to lay it down, therefore, that at any one time the requirements of the people call for a certain proportion of coins to notes in the media of exchange. In affirming this proposition we must bear in mind, however, that the habits of people are modifiable in the matter of the extent to which they will handle credit money. We are supposing for the moment that there are no such things as cheques.

Imagine that people generally would find it convenient to make one-fifth of their payments with notes ; and suppose the rapidity of circulation of coins is twice that of notes on the whole. Then we should have the following equation :—

$$\text{Value of notes} = \frac{\text{value of coins left} \times 2}{4}$$

This is to say the value of the notes in circulation would be one-half of the value of the coins *left* in circulation. Different rapidities of circulation have been attributed to coins and notes in this calculation. If notes were of the same denominations as coins, they would have, theoretically, the same rapidity of circulation as coins ; but when the former are of the higher denominations only, they have a lower rapidity of circulation because they serve ordinarily for the larger transactions only. It must not, of course, be inferred from the above equation that the new currency, including the notes, would be one-and-a-half times the old currency. It would obviously be less than this proportion of the old currency because the purchasing power of money would fall as the quantity of money increased, and gold would, therefore, be driven out of the currency into the arts.

If the due proportion of notes to coin as defined above were

transcended, and notes become relatively in excess, as judged by the requirements of the community, people would go to the bank to obtain coin for their notes until the right balance was recovered. If the notes were largely in excess, this demand for coin in exchange for notes might exhaust the coin at the disposal of the bank and force the bank to close its doors. The governors of our hypothetical bank could form a rough idea from their experience of what the proportion of their notes to their reserves of coin ought to be; and they would have to keep well on the safe side to provide against any local concentration of notes. A purely fortuitous massing of notes in one place might cause a dangerous run on the bank for coin in that place, though it might be that the notes, if evenly spread over the whole district served by the bank, would actually be inadequate to meet the needs of the people. Our bankers would also have to bear in mind that large amounts of cash might be withdrawn for foreign payments for which notes are worthless. But this is a matter reserved for later treatment. Now we assume provisionally that there is no foreign trade; and, this being so, the proposition stated above holds, that, in the circumstances supposed, the relative demands of the public for notes and coin mark the upper limit of the safe issue of notes. We shall observe later that the issue of notes has been extensively regulated by Governments; and also that the importance of notes has paled within the orbit of the all-dominating cheque. The source of the gain from the issue of notes is similar to that from the loaning of deposits.

The theory which has been worked out above with reference to bank-notes holds also of cheques in all its fundamentals. A cheque seldom effects more than one payment, but it is strictly analogous to a bank-note, and is taken in place of cash and notes. A bank may lend money by giving a person a right to draw upon it by cheque up to a certain amount

instead of giving him notes and cash. In effect the bank would have done the same if it had printed notes for the person in question for the sum for which he is granted power to draw.

The reserve held by the bank to meet the claims of its depositors we have called the "*Banking Reserve*," and this may of course contain notes up to a certain proportion. The *bullion reserve* (or the *gold reserve* as it is called when gold is the only kind of bullion needed in the reserve) is what its name implies. The significance of the banking reserve in the home trade we have already grasped, but we have yet to consider in Chapter XXIV its management in view of trade cycles, and the importance of the bullion reserve with regard to foreign trade.

Functions and value of banks.—To conclude this chapter a few words may be said by way of summarizing the advantages of banking already noticed. In the first place, banks bring about economy in the monetary use of the precious metals, by issuing notes (when empowered to do so), instituting cheques (as we shall see more fully later) and lending deposits, as we have seen. In the second place, banks by lending their deposits place purchasing power in the hands of business men for business purposes. Much of the money lent must be lent for short periods only, because circumstances might at any moment give rise to a sudden withdrawal of deposits, and because it might be necessary to restrict loans in order to check a drain of bullion, as will be explained in another chapter. Now, broadly speaking, though a loan for a short time is sufficient for trading purposes (to cover the interval between the time when the trader pays for goods and the time when he is paid by his customer), it is insufficient to enable anybody to embark on an industrial enterprise as money must be locked up in this for a long time. Consequently, it might be supposed that banks afford

little aid in the financing of industry. But bank loans for trading liberate some of the capital previously used in commerce, and the liberated capital can be transferred to industrial purposes. Hence they finance industry to a large extent indirectly. Finally, banks are a convenience to the public in that they serve as places of safe deposit. The conveniences which their cheque systems offer will be dwelt upon later.

The whole of the economy of an advanced community is bound up with its banking system. Only a fraction of the business of the world is now done without recourse to bankers' advances. This being so, the stability of banks and their prudent, and at the same time enterprising, management are essential to a country's prosperity.

Interdependence of banks and bank amalgamation.—

It is of interest to notice that the safety of a bank is linked up with the stability of other banks. Modern business is based on credit, and it is in credit that banks deal. If credit suffers a shock the business world is shaken to its foundations. Nothing administers a more irresistible shock than the failure of a bank. If one bank of good repute closes its doors there is a run on other banks. Moreover, the failure of the one bank may cause the bankruptcy of business firms in whose losses other banks would be involved. Hence, it is nearly always politic for banks to support one another. To the objection that by supporting one another banks encourage the undertaking of speculative business that should be avoided, it may be replied that any bank which runs the risk of getting into difficulties runs the risk of losing its credit. A bank is damaged by having to be helped; and rumour gets hold of the most profound secrets, and always tells more than there is to tell.

The larger a bank the more can it distribute risks and the more confident can it feel about its security. Hence we find

a tendency in most advanced countries for the large bank with branches to take the place of the small independent banks. It has been urged, however, that it is advantageous for each large industrial district to have among its banks some peculiarly its own, which are under the management of a local directorate. Such banks might have many branches and be very large ; but of necessity their eggs would have to be placed in a limited number of baskets. Much of the business of such a district, it is alleged, cannot be properly financed by a bank managed by a board elsewhere, because the board would not be sufficiently in touch with local affairs. The bank controlled elsewhere might appoint a local board for the local business, but the local board, with delegated authority, which was responsible to another board, could hardly be expected to act with the same freedom as a local board wielding ultimate power. But types of federation, which are not amalgamations exactly, and leave great freedom to their constituent parts, are conceivable.

CHAPTER XXII.

FORMS OF MONEY.

Classification of money.—Like most terms popularly current, “money” is elastic in meaning. Broadly it is applied to all media of exchange, but usually a more restricted denotation is ascribed to it. How its denotation has been limited may best be considered after we have classified the media of exchange. Media of exchange, or instruments of exchange, may be classified in a variety of ways. We may begin by distinguishing between different kinds of instruments of exchange according to their source as follows :—

(1) Instruments of exchange issued by Government; the coinage and any paper money put in circulation by the Government.

(2) Instruments of exchange issued by banks, but regulated and more or less certified by Government, like Bank of England notes which are legal tender except at the offices of the Bank of England.

(3) Instruments issued by banks and not recognized by Government, for instance the bank-notes of private and joint-stock banks in England other than the Bank of England.

(4) Instruments created on the joint responsibility of banks and their depositors, namely cheques.

(5) Instruments created by private individuals, for instance bills of exchange.

The surmise is well-founded that the less the risk of failure to meet obligations on the part of the persons or bodies

responsible for media of exchange, the more will the media circulate, that is to say the more frequently on an average will each unit of the media change hands in a given time. Hence, other things being equal, we should expect to find money instruments of classes (1) and (2) circulating more freely and widely than those of class (3), and those of class (3) circulating more freely and widely than those of classes (4) and (5).

Another important distinction to draw, as regards *credit media of exchange*, is that between a general promissory note, which is *intended to circulate*, and a document which indicates that a debt remains to be settled with reference to a particular transaction and is *not intended to circulate*, though actually it may change hands several times. Of the latter class are bills of exchange and cheques. Of the former class are bank-notes. One might hastily conclude that all media of exchange in class (5) must be of the latter kind, but this is not so. The issue of metallic tokens of small denominations by private persons and associations other than banks used to be not uncommon; and, during crises in the United States, large firms have occasionally paid wages with promissory notes of small denominations which were designed to take the place of money locally for the time being.

Sometimes the name "money" is confined to those media of exchange which are counters of exchange, that is to such of them as circulate and were fashioned to circulate. This restricted reference of "money" is probably in accord with general usage. Cheques and bills of exchange are excluded. But, if we qualify the connotation of "money" in this way, we are left without a convenient term to convey a wider meaning. Probably it is best to use the word both widely and narrowly and leave it to the context to bring out its exact implication; and so it will be used in succeeding pages.

The term "*legal tender*," introduced above, is self-explana-

tory, and may at once be defined as all money which can be offered in limited or unlimited quantities in full discharge of debts. All Government money is legal tender, and in England Bank of England notes, except that they are compulsorily convertible into gold at the Bank of England. An example of limited legal tender in England is afforded by *token money* (to be defined later) which has an intrinsic value less than its face value. No person is compelled to take in discharge of a debt more than 1s. worth of copper coins and £2 worth of silver coins. This limitation protects creditors against any form of payment which is a nuisance, makes it difficult for false-coiners to put spurious coins into circulation, and checks the over-issue of token money. As we already have the term "legal tender," there would seem to be no convincing reason for allocating the term "money" to this small class of media of exchange.

Money in its widest sense means media of exchange; in its narrowest sense legal tender; and in its most common sense circulating media of exchange which are legal tender, or are customarily taken as its equivalent, namely the bank-notes which are not legal tender. Money in the third sense may be called circulating money. *Currency* usually means the money issued by Government.

"*Standard money*" is another term in monetary phraseology the implication of which must be noted. It is best to confine its reference to the money in which the standard of value is embodied. *The-standard of value*, under monometallism, means the commodity selected as the basis for money, so that its value settles the purchasing power of money. Gold is the standard of value in monometallic systems of money on a gold basis; gold or silver indifferently are the standards of value under Bimetallism (which will be explained soon); and, if any country adopted what is called symmetallism and took as its fundamental coin one

which contained a fixed quantity of gold and a fixed quantity of silver, the standard of value would be gold plus a quantity of silver which bore a statutory relation to the quantity of gold.

Money composed of the standard of value, provided that it has a commodity value approximately equivalent to its monetary value, is sometimes called "*natural money*," with which all other media of exchange are contrasted under the designation "*artificial money*". Thus a sovereign and a half sovereign in England, and the 20 franc piece in France, are natural money. We may define a coin which forms a part of natural money as a certain weight of a given metal of a given fineness marked with a Government stamp to indicate that it is what it purports to be. It would be possible to have metallic natural money unstamped by the Government, if the term "money" is used broadly, and such unstamped money has existed. But its use causes endless trouble and irritation since every person has to discover for himself how much of the standard metal each lump of it offered to him in exchange possesses. It is usual for Governments in stamping pieces of metal, and thus constituting them standard coins, to introduce a complicated design in faint relief and to mill the edges of the coins. They do this with the object of indicating when coins are getting light, and checking the frauds practised by dishonest persons who extract metal from coins and then put them back into circulation. When coins are so stamped and milled, shaving their edges and rubbing their surfaces, as well as honest wear, leave traces in smoothed edges and defaced designs. It is necessary to lay down limits above and below the theoretical weight of coin within which the actual weight must lie at issue; and a minimum below which the coin ceases to be legal tender.

Free and gratuitous coinage and Gresham's law.—

Coinage is said to be *free* when the Government will coin, without unreasonable delay, any amount of the standard metal on the demand of anybody who brings bullion for the purpose. It is not free if the Government coins entirely on its own initiative, buying the requisite bullion. Nevertheless, it is not essential to the system of free coinage that it should be customary for individuals to take bullion to the Mint to be coined. England is rightly said to have a system of free coinage, but it is usual for people to carry their bullion to the Bank of England and receive at once its value in coins or notes, less a small commission charged by the bank. If taken to the English Mint, gold realizes £3 17s. 10½d. an ounce, but the officials at the Mint may keep a person waiting for some time before delivering him his coins. The Bank of England ordinarily pays £3 17s. 9d. per ounce and pays on the nail, getting its bullion coined as necessity arises.

Coinage is said to be *gratuitous* when the Government, as in England, does the work of coining without making any charge. If the fee demanded by Government is exactly equal to the cost of coining it is known as *Mintage* or *Brassage*. Any exaction in excess of this is known as *Seigniorage*. *De-basing a coinage* means imposing or increasing a seigniorage. The disadvantage of gratuitous coinage when coinage is free is that the work done by the Government in coining may become like Penelope's. As Penelope's web woven in the day was unravelled at night, so coins minted the one day may be melted down the next, or long before they are worn out. Some people may find it less troublesome occasionally to melt coins than to buy bullion, if a gold coin contains just about as much bullion as it will buy. If coinage is not gratuitous, the bullion value of a coin is, of course, less than its face value by the amount of the charge imposed by the Government for making the coin; and the melting of coins is consequently discouraged. But a slight loss is sustained on

melting a number of coins even when they have been minted gratuitously. Coins which are not fresh from the Mint must have lost some weight with use, and coins just minted might have come out in weight near the bottom legal minting limit. When a large pile of coins is melted, however carefully selected the coins may have been, the loss sustained may become considerable. Consequently there is much less conversion of standard coins into bullion under a system of free and gratuitous coinage than one might at first expect. The great merit of free and gratuitous coinage consists in its securing that the bullion value of coins shall be kept closely equivalent to their purchasing power. This equivalence is an incalculable convenience in international trade, as we shall learn.

Gresham's law declares that bad money tends to drive out good money when the two exist side by side. Its application to natural money under the plan of free and gratuitous coinage is immediately evident. The coins first selected for melting or exporting, would naturally be the new full-weight coins because they would contain most metal. Hence we realize at once the importance of keeping the standard coins of a country at a high level of perfection. The withdrawal of light and defaced coins from circulation is secured to-day through laws declaring that when a coin falls below standard weight by a certain percentage, or when it has been defaced in certain ways, it shall not be legal tender, that is pass legally by "tale" as it is expressed.

Gresham's law applies only in a modified form to systems of coinage which insure that coins shall have a purchasing power in excess of their intrinsic value. Such coins would never be melted or exported; but it would still be found that the worst coins would be parted with most readily. Gresham's law also applies in the modified form to classes of money other than standard money. People would be disposed to retain notes of undoubted value, and pass on, as soon as pos-

sible, any which seemed to be in the least likely to depreciate. Gresham's law is so called because it was emphasized with reference to the coinage by Sir Thomas Gresham in the reign of Elizabeth, but it had been formulated more than once before his time.

Credit money.—Strictly speaking, all money which has a face value greater than its intrinsic value is credit money, because its acceptance is dependent upon the credit of the Governments or persons who put it into circulation. However, it is customary to confine the term to money which is not made of the standard metal. Credit money, then, consists in notes, token money, cheques, and—if we use “money” in the widest sense—bills of exchange. Bank notes are engagements to pay bullion which are put into circulation by banks, and are therefore based on the credit of the banks issuing them. *Token money* consists in promissory notes of small denominations stamped on metal. At the present time they are issued as a rule by *Governments* only. The silver and copper coins in England and the nickel coins in America, Germany, and elsewhere, are token money. *Cheques* are orders issued by depositors requiring bankers to make specified payments. Though extensively used in many countries, cheques naturally *circulate* hardly at all. They depend for their value on the good faith of the persons drawing them, which means broadly their credit, and on the credit of banks. Cheques, for many purposes, are even more convenient media of exchange than bank notes. They can be made of any value and created at will, and have certain other advantages also. Certified cheques are cheques on the face of which it is notified that the bank will meet them. *Bills of exchange* are merely promises to pay, which may be legally enforced if payment is possible.

The *system of cancelling indebtedness by means of cheques* is as simple as it is economical. When two persons have dealings with one another, they can discharge their monetary

obligations without using, or causing to be used, any currency at all. If they both use the same bank, the cheque given by the one to the other, when paid in, merely effects an alteration in their accounts in the banker's books. And if they use different banks, again recourse to cash can be avoided ; for the system of cancelling indebtedness may be and is commonly applied to economize time and the currency in the dealings of banks with one another. The institution through whose agency the principle of the cancellation of indebtedness is thus applied to banks in their relations with one another is known as the clearing house. In the clearing house the accounts of banks against one another are made up. Debts and credits are cancelled out against one another as far as may be, and balances only are paid. Thus, suppose there are two banks, A and B, and it is found that customers of A have presented cheques to customers of B for £1000, while customers of B have presented cheques to customers of A for £2000. On the clearing house the one debt is deducted from the other and B pays over the balance of £1000 to A. If A and B are in different towns they can be represented by agents at some central clearing house where the same principle can be applied. Thus, in England the clearing house in London is used as a central clearing house, while the local clearing houses, which are found in most large towns, are used for local business. The chief office of a bank with branches naturally serves as the clearing house for the mutual indebtedness of the branches. Through the clearing-house plan, an enormous economy of cash has been contrived and an enormous economy of time. It has been adopted by businesses other than banks, for instance by railway companies.

Governmental limitation of note issues.—The limitation of note issues by Government is a matter for discussion in public economics, but it will probably prove advantageous to notice it at once. It goes without saying that some banks have pursued a

dangerous policy or been badly managed. It equally goes without saying that confidence in banks has been variable, and that sometimes, even for no apparent reason, the public has been seized with a distrust of a particular bank. Bank failures are, therefore, comprehensible. The distresses caused by large note issues on the occurrence of such disasters constituted one of the reasons which induced many Governments to control the note issue. Another reason was the desire to stop banks from encouraging over-trading by excessive note issues in times of good trade. The English Bank Act of 1844 confined the note issue of those banks which had a note issue to about the amounts at which they stood at the time of the passing of the Act. Banks established after 1844 were not to be permitted to issue notes, and complete or partial forfeiture of note issuing was usually required when banks united. Banks might also surrender their note issues voluntarily for a consideration. A proportion of any issues so forfeited, or surrendered, was to be added to what is known as the "fiduciary note issue of the Bank of England". In its bearing on the Bank of England, the Bank Act divided it into two departments, the issue department and the banking department. The issue department was allowed to put out a certain quantity of notes without keeping any reserve. It is these notes which make up the fiduciary issue. The Bank was authorized, however, to put out notes over and above a fiduciary issue, provided that it kept a pound-for-pound reserve. This pound-for-pound reserve could not be touched by the banking department. The influence of the Bank Act in determining the amount of credit money has been greatly reduced by the development of the cheque system. The Bank Act imposed no restriction on cheques; and, with or without restrictions on the note issues of banks, in course of time cheques would have driven bank notes in bulk from the field. The Bank Act may have had some effect in checking over-trading (as we shall see in Chapter XXIV). But it left banks helpless in face of a serious trade collapse, if they were completely stripped of their cash resources, though their credit might still be good. Gold could not be obtained rapidly from abroad ordinarily. Hence, it became usual for the Government to sanction in extremities the issue of notes by the Bank of England in contravention of the Bank Act. The need for such action, or

similar action, did not arise between 1866 and 1914, partly because of the displacement of notes by cheques, and partly because of the improved knowledge in the light of which banking is directed. The action taken during the war will be dealt with later.

In most advanced countries note issues are strictly controlled in some fashion, but provisions for emergency issues are not unusual. When easy provisions are made, emergency issues naturally get to be depended upon. Dependence upon them, in circumstances which are not exceptional, has, however, been discouraged in various ways. If the quantity of credit money is narrowly limited, the money of a country is made needlessly costly.

Inconvertible money.—Just as a bank may issue paper money, so a Government may issue paper money of its own, as we have already noticed. In doing so, it must be scrupulously careful to exercise restraint lest some holders of notes should find a difficulty in changing them for bullion. All paper for the redemption of which in bullion on demand no arrangements are made, is termed “inconvertible” or “irredeemable” paper money. There is little objection to irredeemable paper money if its issue is so stringently limited that neither trouble nor expense is met with in getting it converted. If it is not easily convertible, for obvious reasons it will depreciate, that is to say, the value at which it changes hands will become less than its face value. What is said here of inconvertible paper applies, of course, to all inconvertible artificial money, whether made of paper or not. “Inconvertible paper” is the term in common use because all inconvertible artificial money of high denominations has been made of paper, and it is the inconvertible money of high denominations which has been the chief source of currency troubles. A debased currency is similar to inconvertible paper. There are few graver disasters than for a country to be reduced to the use of a depreciated inconvertible currency; and experience has shown it to be hazardous to introduce inconvertible paper to any substantial extent.

One disadvantage of using only irredeemable paper is that there is then no par of exchange with other countries. The meaning of "par of exchange" in this connexion will become plain from what follows. Par of exchange is lacking because an inconvertible currency fluctuates in value independently of the value of bullion. The value of gold is approximately the same all the world over, and when the value of the currencies of countries are kept at par with the value of gold, international trade is facilitated. We can imagine how awkward trading between Glasgow and London would be if two different systems of money, which varied in value independently, were used, one in each place. A Glasgow man who sold goods in London would have to keep his eye on the rates of exchange between the two systems of money, and he would never know what the value of money obtained in London would be when it reached Glasgow. If the values of money in the two places moved together, the selling price of Glasgow goods in London would rise when the purchasing power of money in Glasgow fell. In this event the Glasgow exporter to London would run no risk of incurring loss in the manner just described.

All inconvertible paper is naturally viewed by the farsighted with uneasiness. They fear that it will be issued in excess even when it is not, and their fear is not groundless. Governments which have recourse to it are strongly tempted to escape the unpopularity of taxing the people openly by taxing them covertly through the emission of more notes. It is so easy to get from a printing press any extra resources that are wanted urgently. As more irredeemable paper is put out, beyond a certain amount, it depreciates, and as it depreciates public confidence in the currency is shaken and it depreciates still more.

What is the basis of the value of inconvertible paper money?
Would an inconvertible paper currency have any value at all

after it had been issued in such quantities that all other money was driven out of use, and if so, why? Evidently some value would be retained by such a currency, providing that it were declared legal tender for certain purposes, for instance, for the payment of taxes. In this event, it would in effect be convertible into discharges of the obligation to pay taxes. But as only a limited quantity could be used to pay taxes, it would depreciate through its excessive supply, if there were much of it. Could it have a value greater than its value for this purpose? Or, to ask the same question in another form, could it have a value if it were legal tender for nothing? The correct answer would seem to be that it need not have a value, but that it *might* have on the ground of the probability of its being taken, to some extent at any rate, for the payment of debts, or because people trusted to its being redeemed at some price some time. In these circumstances, its value would be founded on custom, or confidence in the return of the Government's sense of equity. But, as the custom, or the confidence, might break down at any moment, such a basis would be extraordinarily insecure. There would always be the chance that the value of the inconvertible paper might relapse to zero and a natural money evolve to take its place.

Currencies may be exclusively paper but convertible.—It must not be supposed that a currency which consists entirely of paper and tokens must necessarily be an inconvertible currency. An exclusively paper and token currency might be made ideal; and, before the war, some authorities recommended that gold coins should be withdrawn from circulation in England, and notes substituted for them, the notes being convertible directly into bullion. The substitution of paper for sovereigns should result in a considerable economy in the cost of the monetary system. Much gold is lost annually through the wear and tear of gold coins. We do not

select one of the most expensive of metals for utensils and instruments for rough household and industrial use; and *prima facie* there is as little to be said for condemning such a precious metal to the rough work of circulating from hand to hand in order to effect the distribution of commodities. If we had a record of what happened to gold coins, their banging on rough counters and scraping in pockets against the hard edges of heavier coins, keys, and what not, we should be amazed that the annual loss on their use was no greater and that a less costly monetary system has not been adopted long ago.

The plan outlined ensures all the advantages which are derived from a natural commodity money, while avoiding the disadvantages inseparably linked with its use in the form of coins. The disadvantages include not merely the cost of wear and tear already described, but also the wastage of minting work through the annual melting of a number of recently issued coins. Under the system described, the increase of the currency, when an increase was desirable, would be brought about normally by the play of market forces. When the monetary value of the paper sovereign rose above the market value of the amount of bullion which a real sovereign theoretically contains, it would pay people to take bullion to the bank and receive in exchange for it paper money of the full monetary value of the bullion. Correspondingly, if the market price of bullion rose above its monetary price, people would carry notes to the bank and demand in exchange for them bullion of the full legal value. As a matter of fact, bullion for export in bulk has long been obtained in this way, it being common, instead of taking sovereigns from the bank, to take their theoretical equivalent in gold ingots. The ingots would really contain slightly more gold than the sovereigns, because the weight of some of the sovereigns would be less than their theoretical weight (p. 240).

The foreign demand is less generally for sovereigns than for their equivalent in gold.

The arguments for a thorough-going system of convertible paper money are persuasive and theoretically sound. But, as custom rules currencies with a rod of iron, it would be difficult to say how the sudden introduction of such a system would be received in normal times. England was determined by the stress of war in her extended use of paper; but many countries have relied more upon convertible paper money than England has done in the past.

An even more revolutionary proposal has been put forward, namely that all coins should be made token coins exchangeable against the standard of value, say gold, but that the quantity of gold obtainable for a given quantity of currency should be periodically re-determined, under the guidance of index numbers of general prices, so as to keep the purchasing-power of the currency constant. An international agreement would, of course, be required to carry such a scheme into effect. On the question of steadiness in the purchasing-power of money, some remarks have been offered on pages 218-20.

Bimetallism.—A monetary system is said to be bimetallic, as we have seen, when its standard of value is either of two metals which for monetary purposes are made interchangeable at a fixed ratio. In all bimetallic systems which have been tried or recommended in the Western world, the two metals have been gold and silver. Bimetallism was given a trial in the United States many years ago, and a sort of bimetallism was in operation in France and a group of countries known as the Latin Monetary Union, in which France, Belgium, Switzerland, and Italy were the most prominent, for many years till the early "seventies".

It is contended that possibly if one very large country, and most probably if several large countries, adopted bimetallism at some ratio which at the time of its adoption was not very far removed from the market ratio of gold to silver, the latter would be brought

to, and continuously kept at, equivalence with the ratio adopted for currency purposes. The theoretical proof of this contention may be briefly put.

Suppose the ratio decided upon is 1 to 25, and suppose that after bimetallism is adopted, say by the United States, France, Russia, and England simultaneously, the market ratio becomes the same through the admission of some silver into the currencies or reserves of these countries. Now imagine a large output of silver from the mines which tends to bring the market ratio to 1 : 26. Immediately silver would flow into the currencies or reserves of the four bimetallic countries because it would have a higher value as money than in the arts. As the market was depleted of its supplies of silver in this way, the market value of silver would rise. At the same time, gold would be set flowing from monetary uses in the four bimetallic nations into the market. Through the introduction of the silver, the purchasing power of all money, including gold, in the four countries in question would fall. When the purchasing power of gold fell, its value in the market would be more than its value as money, and some gold would, therefore, be withdrawn from monetary uses, a course which is presumed to be provided for. A part of this gold would be absorbed in the monetary arrangements of exclusively gold-using countries, if there were any left, and the rest would be added to the gold in the market, and naturally cause a fall in the market value of gold. So, in the case supposed, the value of silver would advance in the market, and the value of gold would descend, until a ratio of 1 to 25 (the bimetallic ratio assumed) was reached.

If, instead of silver, gold were suddenly produced in excessive quantities, so that the market price of gold tended to fall relatively, actions similar to those described above would take place until the original ratio of 1 : 25 was restored. We perceive, then, that through the compensatory demand for gold and silver for money in the bimetallic countries the relative market values of gold and silver might be kept constant throughout the world. Those who are not convinced of this should study the compensatory demands for things which are natural alternatives in a high degree, such as beef and mutton. It is an accepted fact that the ratio between the values of such natural alternatives tends to

vary less than the ratios between the values of other things (see pp. 173-4).

Are there any limits to the adequacy of these compensatory currency demands for gold and silver? Assuredly there are. If silver were produced in vast quantities at a cost of less than $\frac{1}{25}$ of an ounce of gold for an ounce of silver, and the complete substitution of silver for gold in the currencies of the bimetallic countries failed to bring the value of silver up to $\frac{1}{25}$ of the value of gold, the bimetallic countries would become monometallic on a silver basis, and the market value of silver in gold would drop below 1 : 25. The opposite result would be induced if gold were the metal which became very cheap and the above conditions were repeated, *mutatis mutandis*. It is argued, however, that the displacement of either metal from the currencies of four leading countries, if both metals were substantially represented in them, would throw such a mass of the metal in question on to the market that the reducing of the bimetallic countries to monometallism would be exceedingly unlikely. And if the danger were imminent, it is pleaded, silver and gold could be re-rated in terms of each other. But re-rating would be very disturbing to trade, and so would the mere expectation of re-rating. We must remember, too, that the increasing economy in the use of metal for money, for which the development of credit money is responsible, curtails the powers of currencies to absorb metal and so to maintain a fixed ratio between gold and silver.

If three metals were used in a currency as alternatives, the system would be *trimetallic*. As we have already learnt, *symmetallism* means that the standard of value is a fixed quantity of one metal plus a fixed quantity of another. Symmetallism with reference to gold and silver was recommended as a compromise between monometallism and bimetallicism. Its adoption would have raised the value of silver and general prices, but it would not have brought about a par of exchange between gold and silver. The system adopted in India (see p. 251) is sometimes known as the *gold exchange system*. It is in use also in Austria and the Philippines. The standard of value under any schemes which provide for both gold money and silver money, and the re-rating of the one in terms of the other, is said to be a *limping standard*.

Why bimetallism has been advocated.—International bimetallism has been recommended for a variety of reasons, all of which would not be approved by every bimetallist. The chief of these reasons are: (a) to secure a par of exchange between gold-using and silver-using countries; (b) to stop the fall in the value of silver; (c) to render the standard of value less fluctuating; (d) to prevent prices from falling. These reasons will now be examined *seriatim*.

(a) On the meaning of par of exchange, and the inconvenience which its absence causes, we have already dwelt on page 245, in dealing with the subject of inconvertible money. When the gold value of silver is constantly varying, an uncertain and speculative element is introduced into trade between gold-using and silver-using countries. By the time a merchant in a gold-using country is paid in silver for his exports, the price of silver may have dropped in such a degree that much of his anticipated profit is wiped out. And the same risk is run by the merchant in the silver-using country. The interruptions of the smooth course of trade occasioned by these circumstances would cease under successful international bimetallism.

As regards Indian trade, the difficulty which we have been considering was largely removed by the closure of the Indian mints to the free coinage of silver in 1893 and the adoption of gold as a standard for regulating the minting of silver. The action on the part of the Indian Government also turned one point of the argument which we shall consider next, in its application to India.

(b) In the early "seventies" the gold value of silver began to fall. After a time some Governments which held substantial stocks of silver were anxious that the fall should be stopped, and so were those who had interests in silver mines. Moreover, it was contended that the depreciation of silver was operating as a barrier to trade between gold-using and silver-using countries. Their argument ran that customary prices ruled commonly in the silver-using countries, and that when the silver prices charged for Western manufactures had to be advanced, in consequence of the depreciation of silver, much of the market in the silver-using countries fell away. To what extent this contention corresponded with facts, cannot be said to have been finally settled.

(c) For reasons put forward on pages 210-11 the value of gold,

with reference to things in general, fluctuates very little in short intervals, apart from the fluctuations caused by trade cycles (see pp. 266-7). A strong case cannot, therefore, be made out for taking measures to stop the non-cyclical fluctuations in the value of gold. It is true that these fluctuations would be less under bimetallism *provided that silver did not fluctuate in value to a substantial extent more than gold*. But, in view of this proviso, it might be that the bimetallic union of gold and silver would unsteady, with reference to short intervals, the purchasing power of gold.

(d) A serious fall in prices measured in gold began in the early "seventies". To this numerous incidents contributed. Germany adopted a gold standard in 1873, and several other countries about the same time, or shortly afterwards, did the same, or made greater use of gold for currency purposes; and France and certain other countries restricted their use of silver for currency purposes. Moreover, the last quarter of the nineteenth century witnessed important economic improvements which affected very many branches of production and would in themselves have caused a depression of general prices, other things being equal. It is true that a counteracting influence was brought to bear through the developments of banking, which added to the percentage of credit money, but the causes which tended to magnify the demand for gold were too strong to be counteracted in this way. By 1896 a fall of about 40 per cent in general prices had been experienced in England. The general disposition of prices can be read easier in England than in other advanced countries, because in the latter the alterations of tariffs are a disturbing influence. After 1896 prices rose, largely in consequence of the immense outputs of gold from South Africa. Hence the argument for international bimetallism which was based on falling prices ceased to be applicable after 1896. The advance of prices after 1896 probably did more than anything else to weaken the agitation for international bimetallism.

CHAPTER XXIII.

THE FOREIGN EXCHANGES AND EMERGENCY MEASURES.

Some definitions.—We must begin our survey of the foreign exchanges with some definitions. *Bills of exchange* may be regarded as signed promises made by persons who have received goods or services to pay some stated value to the persons who have provided them. Bills are said to be drawn by the people to whom the money is owing and accepted by those who owe the money. They are used in both the home and the foreign trade. When drawn on people abroad they are known as *foreign bills*. A bill may be payable at sight, or after a certain period. A bill payable after a certain period is said to attain *maturity* when the time arrives for its payment. It is said to be *discounted* on being sold to a third person for what it will fetch. What it will fetch for purposes of international payments (to be explained below) depends *inter alia* on the length of time that the bill has still to run and the rate of interest at which it would have to be finally discounted to realize money in the country of its acceptance; but, when the rate of interest at home is less than the rate of interest where the bill is accepted, it may be discounted at a lower rate of interest and held by the person who buys it to await maturity. Dealers in bills are known as bill-brokers. Finally it should be added that it has become the custom in the foreign trade for the bulk of the bills to be accepted by firms of high repute

who specialize in this business. They are known as accepting houses, and they accept for a small commission for persons who want to get bills accepted, making any necessary arrangements to protect themselves. The advantage of this system is that bills are more readily negotiable, and can be discounted at a lower rate, when accepted by wealthy firms that are known in every business centre. The accepting business of London is far the greatest in the world.

The foreign exchanges.—The machinery whereby payments are effected in foreign commerce is known as that of the “foreign exchanges”. Payment is made, in the first instance, with bills running for certain periods, or with cheques, which, for our purpose now, may be regarded as bills payable at sight. Many payments can obviously be made by the return of bills. The bill drawn by Vronsky of Moscow on Jones of London for £10,000 can be bought by Petrovitch of Riga and used by him to pay a debt of £10,000 owing to Robinson of Manchester. In this case everybody is paid when Robinson has collected the £10,000 from Jones, directly or indirectly. The advantage of the transaction in paper is that the cost of remitting gold is avoided.

The price of foreign bills payable at sight cannot in ordinary circumstances mount above, or fall below, their face value in bullion by more than the cost of sending bullion. The cost of sending bullion, when added to the value of the bullion and expressed per unit of the currency, marks what is known as the *upper specie point* of the exchange. The *lower specie point* is obtained similarly by deducting this cost. These definitions will serve generally, but they are ambiguous inasmuch as the cost of carrying bullion may mean either the actual cost at the time or the ordinary cost. In order to avoid the ambiguity, we may speak of “actual” and “normal” specie points.

When do the foreign exchanges tend to pass the specie

points? The answer to this inquiry must shape itself according to the meaning given to specie points. Let us take the specie points as settled by the *actual* cost of transmitting bullion at the time. Then the price of bills in or on a country can pass above or below the specie points, respectively, when bullion is difficult to obtain for bills on demand in that country, or when it is supposed that it is likely at any moment to be made difficult, or impossible, to obtain bullion on demand. An example may be cited from the foreign exchanges in the United States at a time during the conflict between North and South. Foreign bills rose above specie point in the United States because there was a strong demand for means of investing abroad, and the fear lest an embargo should be placed on the exportation of gold was prevalent. In this case, also, in view of the anxiety about getting gold from the United States, the prices of bills on the United States, in regions where they would otherwise have been at the lower actual specie point, must have tended to drop below it. General financial stringency, again, may render the lower limitation to the fluctuations of the foreign exchanges temporarily inoperative; whenever and wherever there is a sudden demand for cash, foreign bills may sell below their specie points for as long as it takes to fetch gold from abroad. If we take the specie points as settled by the *usual* cost of transmitting bullion, we must add to these causes of the passage of the price of bills beyond the specie points any causes affecting the cost of conveying bullion, such as war.

Within the limits of the specie points the prices of bills at sight vary according to the supply of bills and the demands for them, that is in a large measure according to the balance of trade. It should be noted that as one country can pay another in a roundabout fashion, by exporting bills of a third country which are in demand in the creditor country, the prices of sight bills on a given country in any two other

countries cannot ordinarily differ by more than the actual cost of carrying bullion between those other countries.

When the prices of bills at sight rise above *par value*, that is their face value in bullion, they are said to be at a *premium*, and when they fall below *par value* they are said to be at *discount*. When such bills on a country rise to a premium, the exports of that country are penalized and its imports are subsidized; because, on the one hand, paying the country for its exports is made expensive, and, on the other hand, the cost of its imports is enhanced by the premium on the bills in which payment is made. Similarly, when sight bills on a country are at discount, its exports are encouraged and its imports are discouraged. A premium on foreign sight bills in a country, with its natural accompaniment of discounts on bills on the country, is an indication of a shortage, or expected shortage, of bills for meeting the country's obligations abroad, which may necessitate a withdrawal of bullion. But as the country's exporting is quickened while its importing is repressed in these circumstances, the state of trade which gives rise to a departure of bullion is automatically corrected. It is also artificially corrected sometimes with the object of expediting the recovery of normal equilibrium. Artificial methods of amending the state of trade are known as the "correctives" (see below). *The balance of trade and the foreign exchanges are said to be favourable, or unfavourable, to a country when bullion imports, or exports, respectively, tend to result.* This use of terms is a survival of the times when it was commonly thought advantageous to attract bullion to a country.

When bills are drawn in an inconvertible paper currency, the above exposition holds, except that "face value in the inconvertible currency" must be substituted for "face value in bullion". The value in England of a sight bill at *par* drawn in the inconvertible currency of another land is the number

of sovereigns which in that land would buy the amount of inconvertible currency stated on the bill.

Methods of dealing with foreign drains of gold.—We shall see in the next chapter that the banker must keep a sharp eye on the general state of trade. He must also watch continuously the balance of international indebtedness, in so far as he is responsible for any of the bullion reserve. Naturally, the balance of indebtedness in foreign trade is constantly fluctuating. At any moment a community may find that it has imported so much that its exports will not discharge its indebtedness to other communities. It has then no option but to pay in gold if its creditors will not wait. It cannot pay with any other sort of money because all its other sorts of money have a national value only. Bullion is the sole international money. It is because gold may be demanded at any time for foreign payments, that a very much larger bullion reserve must be husbanded than would be requisite in view merely of the home trade. The standard money is gold, we assume. When a leakage of gold from a country begins, the bank answerable for the bullion reserves—we assume provisionally for simplicity that there is one only—would naturally be anxious about its supplies. Three courses of action are open to it with reference to foreign drains of gold :—

I. It may put difficulties in the way of those who need gold, that is to say, it may temporarily decline to deliver gold on demand, unless a customer can prove an unavoidable need for gold.

II. It may offer to buy gold at more than its market value until the strain is over.

III. It may raise the bank rate, that is the rate at which it lends money and discounts bills.

As regards the raising of the bank rate, this device has an immediate and an ultimate effect. Immediately, operating directly on international flows of gold, it checks the drain and

attracts some gold to the country. Ultimately it tends to remove the cause of the drain. It checks the drain immediately for the following reason. The discounting of bills is costly when the bank rate is high. Hence, a rise in the bank rate induces a number of people who hold maturing bills on England to retain them until they reach maturity, instead of getting them discounted and drawing gold out of the country. This effect relates only to maturing bills, that is to bills which have to be met at some future date (for example, to bills for one month, three months and six months) and not to bills payable at sight. A bill is said to attain maturity when the day is reached on which it has to be paid. Thus, some outgoing payments are delayed, and they may be sufficient in amount to stop the drain entirely, for the time being. In addition, raising the bank rate attracts gold, because a country with a relatively high bank rate is a profitable market for investment, especially for short loans.

Ultimately, the high bank rate tends to remove the cause of the leakage. When the bank rate is high, borrowing is discouraged by the heavy cost of borrowing; and, when less accommodation is sought from banks, there is less money to circulate and prices in the country consequently tend to fall. When home prices fall, the country becomes a better market to buy in, but a worse market to sell in; consequently, exports are stimulated and imports are checked. So the balance of indebtedness to foreign countries may be wiped out, and in its place a balance may be created on the other side of the international account. The need of reducing the amount of bank money out on loan, with a view to rectifying the balance of international indebtedness, is one reason why much bank money must be lent for short terms only.

Because raising the bank rate limits or stops the efflux of gold at once, and corrects the state of trade which caused it, raising the bank rate to guard the reserve is technically known

as applying a corrective. The term "correctives" refers to all methods of artificially bringing the balance of trade to the position which is judged desirable. We shall have to consider eventually the effect which frequent and considerable elevations of the bank rate are likely to have upon home enterprise and commercial life generally.

The other two methods of dealing with a drain suffer from certain defects. Paying for gold more than the market price of gold is expensive, and it has little or no effect upon the balance between imports and exports. It does not, therefore, tend in itself to reform the state of trade which caused the drain. The latter flaw is also found in the method of putting difficulties in the way of paying gold on demand. This action, moreover, is apt to shake the confidence of the public in the bank and so to be followed by serious reactions, even in normal circumstances, for instance by the private hoarding of gold and—because of the doubt about getting gold on demand—by a depreciation of bills drawn on the country.

If we revise our fiction and suppose there are many banks in a country, our theory remains unaltered in substance, but difficult questions of the relations between banks are raised.

Reserves.—We shall now briefly notice certain problems of reserves. As regards foreign trade, the bullion reserve alone matters immediately, but we must consider at the same time certain problems of the banking reserve also, because they are closely bound up with those of the bullion reserve.

Is a single reserve system, or a multiple reserve system best? England, we know, which holds a pre-eminent position in the banking world, for one reason because there is never any doubt but that the Bank of England will pay gold on demand without question, has a single reserve system. Other English banks deposit their reserves, or a large part of them, with the Bank of England, but they must retain what is needful for till money for everyday business. The single reserve arrangement, which was not deliberately planned in England, but was brought about by the

prestige and the peculiar position, in relation to the Government, of the Bank of England, has merits and demerits.

One obvious merit of the single reserve system is that it enables the banking of the country to be conducted with smaller banking and bullion reserves than would be needful otherwise. Just as the depositing of the cash savings of private persons (which are their reserves) in banks reduces the amount of cash which must be kept idle in hoards, because the bank which holds the resources of many persons can average risks (see pp. 224-5), so the depositing of the reserves of banks in one bank reduces the aggregate amount of cash which must be held in reserve. Each bank must be prepared for the worst, but the bank which guards the banks' reserves need not be prepared for the worst to happen to every bank at the same time. This advantage cannot be gainsaid. But a great responsibility rests with the reserve bank. Act the depositing banks never so prudently in deciding upon the extent of their reserves, a disaster to banking might result from rashness on the part of the bank in which the reserves were deposited. The latter might retain insufficient cash in its coffers and be unable to pay back the bankers' deposits on demand. But when the reserve bank has the high reputation of the Bank of England this danger is small. Moreover, if the note issue were limited for ordinary times, and in the difficulty supposed a larger issue of notes could be kept convertible, the stoppage of bank payments might be warded off by an emergency issue of notes. In more than one country there are arrangements for emergency issues of notes. Under the single reserve system the responsibility of each of the depositing banks, as regards maintaining adequate *banking* reserves, is as great as it would be were they to hold their own; and the cost to them per unit of reserve kept is also as great, provided the reserve bank pays no interest on bankers' deposits. The Bank of England never pays interest on any deposits.

Under the single reserve system there is *unity of control as regards the bullion reserve*, which is the most vital part of the reserve. Undoubted advantages are associated with unity of control. A smaller bullion reserve is then possible and responsibility is fixed; while there is nothing, of course, to prevent other banks from keeping supplementary reserves, as many do in England.

Moreover, when the bullion reserve is centralized, its amount can be seen at a glance; while, under a multiple reserve system, the bullion reserve might drop below the danger point and nobody might notice what had happened. It is true, however, that, under the single reserve system, the reserve bank might find some difficulty in forcing other banks to restrict loans and raise their discount rates when gold was being drained from the country. Had the depositing banks placed adequate reserves with the reserve bank, they might be inclined to argue, when the reserve bank put up its discount rate in order to attract gold, that the reserve bank should have kept a larger part of its reserve in gold, and that they were not obliged to spoil their businesses for a time by following suit and so contributing to the cost of the reserve bank's folly. This difficulty, of course, is not met with if all the banks of the country are sufficiently dependent on the bank with the bullion reserve, and must follow its lead, or if there is an understanding that they should do so which is observed. Until recent years the Bank of England was not only the keeper of the bullion reserve, but was also so much the most important lender in the short loan market that it exercised an effective control, the joint stock banks following its lead as a matter of course. Latterly, however, as the independent operations of the joint stock banks have increased enormously in importance, its control has diminished. Its policy still has a considerable influence, because of the universal practice among other banks of paying interest to their depositors at a rate which is a fixed amount beneath bank rate. A rise in the bank rate raises accordingly the sums they pay as interest to their depositors, and so makes it necessary for them sooner or later to increase the rates they demand for loans and discounts. However, this control does not always operate with sufficient speed; and it is often a long time before the market rate of discount is raised by an increase of the bank rate. The Bank of England has, therefore, been forced in recent years to have occasional recourse to the second of the devices mentioned above, and to buy gold in the bullion market, which saves the situation for the moment and gives time for the bank rate to make its influence felt. Finally, under the single reserve system, a smaller bullion reserve is sufficient.

The questions of the magnitude of the bullion reserve and the

magnitude of the banking reserve raise many issues. The smaller the reserve the more economical is the banking system. But the smaller the reserve the more jealously must it be guarded. The smaller the reserve, therefore, the more instantaneous must the action of banks be in raising discount rates when there are signs of a heavy home demand for cash, or of a foreign drain. And the smaller the reserve, the higher must discount rates be raised, with reference to cash or bullion withdrawals of a given magnitude, because the briefer is the time for which heavy withdrawals could be endured. Frequent fluctuations of bank discount rates, and considerable fluctuations, are, however, very disturbing to business. It may be pleaded that they are only disturbing to business when business wants disturbing, that is when it is running on such lines that gold is being driven out of a country, or when business has become too speculative. But this plea does not hold of all circumstances. The withdrawals might be caused by the collapse of confidence after a bank failure, when there was no over-trading. Or there might be withdrawals of gold for export which were not connected with the business that the country had been doing : another country might want gold for a particular purpose. In neither case can the sudden imposition of a high bank rate be regarded as a needful sedative to the business of the country. It must be realized that the bulk of the business done in an advanced community involves the discounting of bills, or bank accommodation ; and even in cases in which a check on trading is desirable, it is not always in the interests of trade to check it suddenly. It may be desirable to stop a bicycle that is running away down a hill, but if it is stopped with a jerk so that the rider is thrown violently, as bad a disaster as could be may be the consequence. At least the reserve must be sufficient to prevent any chance that banks will be drained dry. Since it is the function of a reserve to be paid out when necessary, and a reserve ceases to be one when payment from it is refused, it is not reasonable to affirm that safety is secured if the reserve is never permitted to fall below a certain limit. This is like affirming that poverty would be avoided if everybody always kept sixpence in his pocket,—as the United States, in the matter of banking reserves, has learnt to its cost. Any regulation of reserves must take the form of providing that *in normal times* they must be of a certain amount.

The foreign exchanges and monetary problems during the war.—As monetary problems during the war were mixed up with problems of the foreign exchanges, discussion of the former has been reserved for this chapter. When war broke out, the foreign exchanges as a whole moved violently to extreme positions favourable to England. The reason was that bills to an enormous value accepted in London had to be met, and adequate means to meet them were not forthcoming. The uncertainty of war imposed a serious check on the creation of new bills, and the possibility of meeting old bills by sending new bills was considerably limited in consequence. Bills are created on the basis of trade done, and, in response to demand, on the basis of anticipated trade, so that a famine in respect of bills is never experienced ordinarily. But it was experienced when hostilities began; and alternative means of payment were equally out of the question. Gold was not available in sufficient quantities, nor could it be safely transported; while securities could only be realized at very heavy loss owing to the sudden depreciation of values and the closure of stock exchanges. Hence, to a very large extent, remittances did not arrive: in other words, the foreign exchanges broke.

This was a very serious matter for the London accepting houses, as they could not themselves pay if they were not paid. The Government was, therefore, compelled to arrange for their assistance until some time after the resumption of peace; for, if they had been forced into insolvency, the downfall of large numbers of trading houses could not have been avoided, and a financial panic might have supervened. Similarly, the Government found it necessary to arrange for the financial support of other businesses which were equally driven to the verge of bankruptcy by inability to get the debts owing to them paid. The Government, of course, had to act through the banks, and particularly through the Bank of

England. The needful money was found ; and, as a number of bills representing short loans abroad, that would have been renewed ordinarily, had to be liquified at the same time, an enormous volume of additional credit had to be created by the banks. It, therefore, became imperative to increase the amount of cash in the country, particularly as the financing of the early days of the war had to be provided for also. Two courses were open to the Government : either to suspend the Bank Act, which limits the power of banks to issue notes, or itself to issue paper money. It chose the latter course ; one-pound and ten-shilling notes were rapidly prepared and soon equilibrium was again restored between cash and credit money. In issuing the new paper money, the Government had also in mind eventually the strengthening of the gold reserve. In course of time, paper not only supplemented but took the place of sovereigns and half-sovereigns, which were consequently liberated from circulating work and added to the reserve. The reserve was also increased by purchase of gold, portions being retained at Ottawa, the Cape, and elsewhere. The drain of gold from the bank in the first days of the war was considerable, but, in view of the steps taken by the Government, it never became alarming.

As regards the later course of the foreign exchanges, the feature of most importance was the complete reversal of the exchange with the United States. This took place in consequence of the heavy purchases from the United States for the Allies, combined with a natural decline in the exports to pay for them. The Government dealt satisfactorily with the situation by placing some check on imports, encouraging the sale in the United States of certain British-owned securities, arranging for loans in the United States for paying debts there owing, and getting control over securities still held in England that were most marketable in the United States, to enable it to use them as collateral security, when necessary, in making such arrangements.

At the beginning of the war, a general moratorium (which means a legal deferment of the obligation to discharge debts) was declared, and retained for a short period, in order to give the Government time to decide on its action and to take action, and also to prevent creditors from pressing debtors who could not immediately pay, and so bringing about a financial crisis. But the remarkable thing, as it turned out, was the absence of panic. The whole experience proved that the State has it in its power in crises to lend effective support to the most delicate parts of the economic system, or those subjected to the most severe strain, and so to prevent a general business breakdown.

CHAPTER XXIV.

TRADE AND CREDIT CYCLES AND CRISIS.

WE may now leave for a short time questions exclusively about money and examine some remarkably curious variations to which trade is subject. Attention has been withheld from them before because they are inextricably intermingled with the activities of banking. They may be caused, or at least encouraged, by the granting of credit by banks on too liberal a scale at a low rate of interest; and, however caused, they create tendencies which are a menace to the safety of banks, and may have to be arrested by the banks in a manner which will be described.

Synchronism and periodicity of fluctuations in trade.

—Everybody knows that production does not flow along uninterruptedly, but has its ups and downs. Periods of brisk business are followed by periods of stagnation. Some unsteadiness in trade we should naturally be prepared to find, for there are vicissitudes in all human affairs; but certain peculiarities characterize the broad fluctuations of trade which one would not expect and which call for explanation. These peculiarities we may designate "*synchronism*" and "*periodicity*".

Good times in the different industries tend to *synchronize*, or come more or less simultaneously; and so do bad times. There are numerous exceptions, but the rule seems to be that most industries are every now and then depressed together, and every now and then flourishing together. Moreover,

synchronism appears to hold internationally. When commerce is sluggish in one country it tends to be sluggish also in other countries.

The *periodicity* of fluctuations in trade means that the intervals between the fluctuations are not of quite uncertain duration. Regularity is far from being perfect, but it is sufficient to warrant the assertion that trade fluctuations exhibit a degree—a comparatively high degree—of periodicity: they are like the disturbed oscillations of a pendulum when a kitten is playing with it. It used to be claimed that the time normally occupied by a trade cycle was ten or eleven years. But departures from this duration are not uncommon; and it has recently been suggested that the wave length of a trade cycle really inclines to be about twice or three times a period of approximately three and a half years. Thus the cycle, it is said, may be expected to cover seven years at least, and, should it exceed this length, to extend to about ten and a half years. But, unfortunately, the evidence which has been collected and sifted so far is too scanty to justify an unhesitating generalization. Of commercial fluctuations prior to the nineteenth century, we are comparatively ignorant, and it is not known how far the cyclical movement reaches back.

The climatic explanation.—Coming to explanation, we may take first the objective, which looks to external events. But before doing so, it may be as well to point out that, to account for trade cycles, it is not necessary to discover among the circumstances influencing the state of trade some which are subject to cyclical variations, and to such cyclical variations that they can be brought into correlation with the cyclical variations in trade. Cyclical effects may be brought about by a combination of constant causes; as, for instance, the waves on the sea which are cyclical, meaning rhythmical, and may result from the combined action of a steady wind and gravitation. However, the cause of trade cycles may be

cyclical ; and it has been suggested that in climatic conditions we have a set of cyclical external events which will account for them entirely or partially. The explanation of the trade cycle which lays special, or exclusive, emphasis on climatic variations is popularly known as the *sun-spot theory*, because inquirers were led to elaborate this explanation when it was observed that the sun spots changed more or less regularly, and that there seemed to be some correspondence between the period of their change and the period of change in trade. It was suggested that sun-spot variations afforded an index of the quantity of heat emitted from the sun from time to time, and so of climatic variations generally. And the case for the sun-spot theory was strengthened by the fact that no other possible cause among external events could be found. It is universally allowed, of course, that external events other than the climatic, such as wars, new discoveries, and the opening of new markets, affect the state of trade ; but, as these incidents occur irregularly, they explain, not the regularity, but the irregularity, such as it is, in the changes from bad to good, and good to bad, trade.

There are three chief steps in the argument of those who believe that business oscillations can be attributed ultimately to climatic causes.

(a) It is supposed, in the first place, that there is what is called a solar period, or some law of recurrent alteration in the amount of the sun's heat, and that this period fits into the period of the trade cycle. As regards this supposition, the theory recently put forward is highly significant, namely that the climatic conditions of the world vary in a cycle of about ten and a half years, broken by sub-cycles of about three and a half years each.

(b) It is argued, secondly, that climatic variations affect the harvests of the world. Variations in the amount of heat emitted from the sun could obviously do so directly and in-

directly—indirectly through the influence of the sun on the rainfall. That the harvests of a particular district vary with the climate of that district has been proved. But it has not been proved beyond question that the harvests of the world vary substantially with the solar period. When the sun gives out more heat than it does ordinarily, harvests are made richer in some districts but poorer in others—for, to take an example, dry localities are benefited, while wet localities are damaged, by a greater rainfall—but over the world as a whole the increases might conceivably tend to counteract the decreases.

(c) Thirdly, it is argued that the size of harvests, generally or in particular places, fixes the demand for many other things. This part of the argument has ramifications which have been variously emphasized, and we cannot pretend to do more than notice them cursorily. It is usually supposed that bad harvests bring about depression, because more has then to be spent on food, so that less is left to spend on other things; while the prices of materials like cotton, wool, and leather rise, so that the prices of things made from them rise, fewer are bought, and the demands for certain other things are undermined. One difficulty about this explanation is that, after bad harvests, though some people have less to spend than before, other people have more, over and above direct and indirect expenditure on the produce of the land. Thus, farmers would have more to spend if workpeople had less to spend after paying for their food. Possibly this difficulty may be resolved by supposing that the farmers' gains only exert their full effects on demand gradually through the avenue of investment. And, in any event, there would be a redistribution of demand over goods, and the net psychological effect of this—if psychology is brought in as an aid—might be depressing to enterprise. Unusually good harvests, of course, would equally necessitate a redistribution of de-

mand, but conceivably the net effect of this on enterprise might be stimulating. Again, there are the reactions of the purchasing power of income on the disposition or indisposition of people to work harder to take into account; or, again, a part of the effect may result from the application of more labour to the land after bad harvests. Finally, the special emphasis laid by some writers on the consequences of bad harvests in backward places which are mainly agricultural must be noticed. It is argued that they mean an enormous reduction in the demand for the produce of more advanced countries, which is most depressing to trade, in view of the extent of the backward countries. For earnings are so low, say in India, that, when harvests are bad, little or no surplus may be left to spend indirectly abroad, and such localized gains as there are may tend to go into hoards. Enough has now been said to show that the third stage in the climatic argument cannot be by any means simple if it is to be satisfactory; but it would seem from the above discussion that variations in harvests might have a sufficiently disturbing or stimulating outcome to induce trade depression or the reverse.

The objection might be raised to the climatic explanation that it does not adequately account for the phenomenon of synchronism to which reference has been made, that is for the remarkable generality of good or bad trade. To this it may be replied that industries are dependent upon one another nationally and internationally. Every nation functions economically as a whole, and in no insignificant degree the whole world functions economically as a whole. Throughout an economic system of interrelated parts, retarding and stimulating shocks are instantly transmitted. If the market for boilers contracts there is less demand for steel and coal and ore and the plant with which boilers and steel are made. Thus bad trade is passed on, and, as it leaves in its wake

reduced aggregate earnings, so that the demand for consumers' goods is reduced, the trade of providing them tends to become bad also. Throughout the world, too, the economic shock is spread. When American trade begins to droop, America buys less from England, and English industries, through losing orders, begin to droop in turn. If over-trading starts in America, she imports more, and English trade becomes brisk. Similarly, the strain of a financial crisis is transmitted from country to country.

This reply is effective so far as it goes, but the question remains as to whether it entirely meets the objection; and, in any event, objective events alone, however exhaustive our enumeration, will not account for all the features of the phenomena of trade unsteadiness. They will not account for over-trading, for example; nor, again, will they for the fact that, once bad trade has begun, it generally continues for a certain time, despite changes for the better in external events. Some influence must certainly be allowed to the effect of business conditions on the state of mind of business men, and to the reaction of the latter on the former—that is to subjective incidents. This brings us to a psychological explanation, some part of which at least would be accepted, as a necessary part of a complete theory of the trade cycle, even by those who are most firmly persuaded that the objective explanation is substantially sound.

The psychological explanation.—The first feature to notice in the subjective explanation has a bearing on the synchronism of trade variations. It is the doctrine that people incessantly and insensibly mould one another's ideas and colour one another's minds when they are repeatedly brought into contact as interrelated parts of a system. It is very difficult to resist falling into the mood and adopting the outlook of one's business acquaintances: enthusiasm and despair are both catching. According to this theory of the

communication of moods in the business world, there is a subjective explanation, as well as the objective one already given, of the generality of good trade, or the generality of bad trade, at one time in the industries of a country.

There is nothing particularly subtle about the action and reaction which are said to subsist between these subjective facts and the state of trade. A check on demand is supposed, not only to stop some trade, but also to throw those who are engaged in the businesses affected into a state of mental depression, and so to cause trade to become worse than it need be. In short, the view is that bad trade induces a temporary paralysis of enterprise. Similarly, it is claimed that a rise in demand, at the same time that it excites activity, generates in business leaders a state of mental exhilaration, and so causes trade to be more active than it should be. The business man who happens not to be mistaken about market demand may very well be mistaken, when he is sanguine, about the share of the trade which he personally will secure; and trade can easily become more active than it should be through the granting of long credits by business men to one another and the provision of accommodation by banks. When people are sanguine, they are disposed both to ask for and grant excessive credit.

Further, it is alleged that these supposed abnormal psychological states of a community, which result in judgments about business prospects exaggerated one way or the other, tend to endure for some time after their objective causes have been removed. Rapid recovery from them is said to be unusual. Hence it is argued, not only that bad trade may continue after any objective causes of bad trade have been removed, or after events have occurred which ought to have made trade better, but also that over-trading can be brought about by good trade, and may tend to be brought about by good trade. The argument runs as follows. When trade is

good, demand is lively and prices rise. Business men then make efforts to get the output increased, with the object of snatching profits from the high prices. Their action, producing effects which work on sanguine minds, stimulates trade and trade becomes even better. Finally it may be found that the demand for goods at the high prices had been overestimated, and that the prices which can be obtained in view of the enlarged output mean loss.

On the strength of these hypotheses, the theory has been put forward that subjective influences alone, their action upon business and its reactions upon them, quite apart from any indirect consequences of the supposed climatic cycle, will account for the trade cycle. The case for this theory has already been put in fragments, but it may be put again as a whole. During a trade collapse, most people are depressed and their depression continues after its cause has already been removed. Consequently, when they recover their spirits, as they do naturally after a time, business prospects are found to be brighter than they thought. Trade then revives rapidly, people are wonderfully encouraged, and trade gets better and better, till it is better than it should be. Ultimately, through the psychological effects of economic activity, the community, unless checked, is rushed almost automatically into feverish trading, which culminates somewhere in collapse. Commercial stagnation then supervenes; and from this in time recovery is made as before and the cycle starts anew.

Enough has now been said of the psychological theory to bring out its essential features. That it contains large elements of truth cannot be denied; but in the social psychology upon which it relies there are parts that have yet to be established, and the theory is obviously weak, and has really to invoke the aid of non-psychological causes, in accounting for the start of a trade cycle. In accounting for the course

of a trade cycle once started it is much more convincing, but even then it cannot stand alone as the check on good trade that has to be admitted is an economic limitation which is independent of people's states of mind.

The explanation based on competition.—Some authorities attribute the trade cycle almost exclusively to the ordinary operation of competitive forces. The operation of competitive forces has been briefly adverted to above, but it has now to be considered specifically with reference to its power of producing the effects in question. It is maintained that under competition there must normally be a tendency to over-production. Rivalry in business implies that each man is trying to get another's business, and the newcomer does not depend on making his living out of new business alone. Now, as there are always some newcomers and many of the old firms are making provision to sell more than before, excessive provision must eventually be made for the needs of the community. Consequently, it is argued, there is a tendency to over-production even if people are not over-sanguine. The pushing man may know that, in consequence of his action and that of his rivals, over-production must supervene, but he has no alternative, if he is to get on, and he takes the risk of being one of those who will suffer, though he hopes to be one of the survivors. The "over-production" intended by the more enlightened writers does not necessarily mean that more is likely to be produced than people can consume—for this, in a large number of cases, would be impossible—but that more production has been arranged than the community can carry out with its available resources. When this is so, the pressure of demand on the agents in production drives up costs of production until relief is found in the stoppage imposed on the undertakings of some of the firms who cannot then get remunerative prices. Thus, one set of competitive forces, which consist in enterprise and may

be called the positive, make for over-production, so understood ; while another set, which may be called the negative, arrest production by raising costs and reducing selling prices, and finally cut it down by removing the least successful producers and leaving only the "fittest" to survive. To repeat a simile used above, the positive forces raise the output as the wind raises the waters of the sea, while the negative depress it as gravitation counteracts the effect of the wind on the sea ; so that in the economic sphere we have waves of good and bad trade like the waves of the sea. To the question why the action and counteraction do not coincide, instead of being partially successive, the answer might be made that social friction holds back for a time the effects of over-trading on costs of production, and that people naturally resist the process of natural selection till they can resist no more. But it is questionable whether the actual facts of the trade cycle, including the synchronizing of similar effects, could be explained without admitting the psychological influences that have already been discussed. As the purely psychological explanation does not satisfactorily account for the starting of a trade cycle, so the present explanation, taken alone, would not seem to account sufficiently for the magnitude of the upward and downward sweeps, when business is regarded as a whole. The truth almost certainly rests with a combination of the three explanations that have been distinguished.

Are trade fluctuations increasing?—The more a community functions as a whole, the more likely, other things being equal, are *general* states of business animation or depression. And the more production is guided by anticipation, the farther astray can production go, other things being equal, and the more excessive can over-trading become. Now, economic progress means, *inter alia*, that a community functions increasingly as a whole and that its production is increasingly governed by anticipation. Hence it would seem that trade

fluctuations might be expected to assume greater dimensions in the future.

This conclusion, however, I am not prepared to accept. It is not unlikely that trade depressions and their opposites may diminish in intensity in the future, though, doubtless, it might not be possible to prove that they have diminished up to now. Psychological forces may be dissipated by experience; and those which bear on the trade cycle may tend to vanish as we get to allow for their periodic recurrence and to realize their transitory nature. Far-sighted employers may be expected increasingly to choose depressed times, when prices are low, for laying the foundations of new enterprises. Prompter, ampler, and more accurate information, will reduce the chances of business miscalculations; and production may get steadier also because steady production becomes more and more economical as a community progresses, largely in consequence of the waste involved in letting expensive machinery lie idle. Finally, we may confidently look for improved foresight on the part of banks throughout the world and the exercise by them of yet greater prudence in controlling credit.

The question whether a shorter period will tend to take the place of the average period which the past reveals in cyclical variations, through the rush of modern business, speeded up by the telegraph and the telephone, is too problematical for discussion here. It is possible under every theory of the trade cycle.

Banking in relation to trade cycles.—The degree of over-trading is dependent upon the amount of credit media of exchange created through the agency of banks. When trade is brisk, money circulates more rapidly than when trade is sluggish, more credit is given by business men to one another, more bills are offered for discount, and larger overdrafts are obtained from banks. So prices are bound to ascend until the demand for goods collapses. The demand for

credit from banks naturally forces up both the rate of discount and the charge for accommodation, because the limited supply of cash will not support a credit superstructure of an unlimited size ; but the rise in bank rates may not be sufficient to stop over-trading. Banks in fixing their policy, including their rates, should keep a watchful eye on the state of trade ; but there is a fear that they too, in competing with one another for business, may think too much of their own prospects and too little of the interests of the community.

When trade collapses, appropriate action on the part of banks is a matter of profound national concern. Loss of confidence at a time of trade collapse may create an excessive demand for cash. If cash cannot be found, even solvent firms may be driven into bankruptcy. At such a time, it is desirable that banks should lend freely when undoubted security is offered them, but at a high rate of interest, so as to economize the cash available, by discouraging those who do not pressingly need assistance, and attract gold to the country. Many years ago, bankers were apt to lose their nerve when trade collapsed, and seek a deceptive security in a refusal to grant accommodation. The result was almost invariably a financial panic, the path of which was strewn with bankruptcies, or a *crisis* as it is commonly called. In the losses connected with the bankruptcies the banks shared. As banks in England now act more tactfully and are legally free to do what is needed, the crisis in England has become a rare occurrence. It is vital at all times, and particularly at times of tottering credit, that the ability of banks to meet their obligations should be above suspicion. No greater disaster can befall a business community than the suspension of cash payments by some important bank. All business is so interwoven with banking that the stoppage of payment by a bank completely disorganizes trade ; and it shakes to its foundations the credit upon which modern commerce depends.

BOOK VI.

DISTRIBUTION OR THE SHARING OF WEALTH.

CHAPTER XXV.

INTRODUCTORY AND INTEREST.

Analysis of distribution.—The economics of distribution, it is sometimes said, explains people's incomes. The assertion is broadly correct ; but the economics of distribution is concerned primarily, not with *incomes*, but with the *earnings* of the several factors in production, and the relation of these earnings to one another and to human efforts. Some people are born wealthy while others achieve wealth. The economics of distribution is not concerned primarily to show how, by laws of inheritance or otherwise, it is made easier or more difficult to be born wealthy. It is concerned primarily to show why a man's income from his accumulated wealth, whatever its form, is what it is ; and why his earnings are what they are.

The economics of distribution, we may say, accounts for the sharing of the wealth produced by a community among the agents, or the owners of the agents, which have been active in its production. The agents of production are commonly classified into (1) land, meaning all natural agents ; (2) labour ; (3) capital ; and (4) organizing ability. Sometimes it is said that land earns *rent*, labour earns *wages*, capital earns *interest*, and organizing earns *profits*. There is, however, a lack of agreement among people in their use of the terms "rent,"

"wages," "interest," and "profits". Thus, a part of employers' earnings is not infrequently spoken of as "rent of ability," while another part is quite as commonly called "wages of management". Again, the term "profits" is not unusually confined to payments made on capital. These ambiguities will have to be removed as we proceed.

There are different ways of expounding the theory of distribution, but they are not equally lucid. The way which seems to me least baffling to the beginner, is that which takes the problem of distribution piecemeal. We shall, therefore, take the problem piecemeal at the start; but, finally, we shall observe that ~~the theory of the payment made for any one agent in production is, in essentials, identical with the theory of the payment made for any other agent in production—that~~ is to say, to take one example, that the theory of the interest paid for capital is in essentials identical with the theory of the wages paid for labour. But we can only say they are identical "in essentials": individual characteristics stand out in each theory, because capital and labour are different in nature, though they bear striking resemblances to one another in that both are agents or factors in production.

The payment that will be explained first, is payment for capital, that is interest. To interest, the rest of this chapter will be devoted.

Gross and net interest.—It will be as well to point out at once that "interest" is an equivocal term in economics. In order to lay bare the exact nature of its ambiguity, it is necessary to analyse the complex payment denoted by interest in its widest sense. The payments included are:—

- I. Payment for the loan of capital, when no risk, no inconvenience (apart from that involved in saving) and no work is entailed upon the lender.
- II. Payment to cover risks of loss, which may be (a) personal risks, or (b) business risks.

III. Payment for inconvenience of the investment. ✓

IV. Payment for the work and worry involved in watching investments, calling them in, and re-investing.

Some brief comments on these payments will suffice. When money is lent to a business man, without the pledging of property to cover its value adequately, certain risks are run. ~~The borrower may prove dishonest or incapable; hence there is a personal risk. And the business in which he is engaged is bound to be speculative in some degree; hence there is a business risk.~~ Some businesses are more speculative than others: taking up a new invention may be highly speculative, and even the most humdrum of businesses are risky to some extent. No firm can be certain of always passing unscathed through the industrial and commercial readjustments rendered necessary by alterations in demand, or in the conditions of supply, or in the lines of foreign trade.

~~Competition settles in a rough fashion the level of payments against business risks in the several industries and trades of a country.~~ Theoretically, these payments should be of such an amount that, on an average, their annual sum in any given industry would about equal the business losses incurred annually in that industry on an average, apart from losses for which unusual incapacity or dishonesty were answerable. The business risks and personal risks incurred by those lenders of capital to a business who have prior claims upon the assets of the business, because they hold debentures or preference stock, for example, are, manifestly, less than the risks run by ordinary shareholders.

~~Apart from risks, the perfectly convenient investment is one in which the investor can place large or small sums, leave them as long as he likes, and withdraw them at a minute's notice without loss.~~ There is a paucity, if not a complete dearth, of investments of this kind in every country, which is not to be wondered at. If the borrower can force

the investor to take back his money at any time, the investment is not ideally convenient. If the money is irrevocably locked up for a long time, the investment is exceedingly inconvenient. ~~Borrowers who are so placed that they must get their money on terms not readily acceptable to lenders will obviously have to pay something for the inconvenience of the terms which they offer.~~

The explanation of many very high rates of interest is that ~~the lender is called upon to do a great deal of work.~~ (3) The man who lends money on note of hand, not only incurs heavy risks, but is also compelled to devote most of his time to making inquiries, giving discharges for money returned, and arranging to put it out again. The book-keeping alone involved in his business is far from a negligible item. ~~A substantial proportion of the interest paid to a person who lends small sums on notes of hand is ascribable to the work done by him.~~ But, no doubt, a substantial proportion is due also to the fact that his business would be distasteful to many small capitalists. In view of this, there is a very limited supply of money for the purpose to which he devotes his means. The earnings of such a money-lending business are, therefore, as a rule, appreciably above those of callings which require about the same capacity and diligence. In the light of this discussion, the reader will understand why the rate of interest charged by pawnbrokers is so high.

After full allowance has been made for payments of classes II to IV, a balance will be left over. This is payment of class (4) I, which is termed "pure interest," "net interest" or "economic interest". ~~The rate of interest paid on Government Stock of the highest repute is the nearest approximation to it.~~ "Gross interest" is used of the sums actually disbursed for capital, which may include payments of all four classes enumerated above.

Demand for capital.—To explain economic interest, we

must analyse the demand for capital. Productive demand may be illustrated by taking the case of, say, a cabinetmaker who produces an amount of furniture which leaves him a net income of £50 a year which he could largely increase if he had more tools and some simple machinery. Let us suppose that £100 spent on tools and machinery would increase his income by £50 a year. Suppose, further, that by setting aside £10 a year he gets a fund sufficient to keep the tools and machinery in repair and renew them when they wear out. Then £100 of capital is worth to him £40 a year net. Another £100 would be worth less than £40 a year, inasmuch as he would devote the first £100 to satisfying his most urgent requirements. But it would still be worth a great deal, say £30 a year net. Similarly, another £100 would make a difference of something less than £30 to his net income, and yet another £100 of capital would still have value to him, though a less value, and so on. The schedule stating these values of different quantities of capital to this cabinetmaker may be called his "demand schedule for capital". Other producers, similarly, have uses for capital. When we combine the demands of all of them we get the total *productive demand for capital* in the community.

In addition to the demand for production, including trading, there is also a *demand for capital for consumption*, as we may call it, using "consumption" narrowly. This demand is, however, unimportant in comparison with that for production. There are some people, with expectations of future income, who are short of income in the present and wish to realize their good fortune before it actually reaches them, perhaps in order that they may enjoy themselves at once, or perhaps in order that they may enter professions, the training for which is expensive and the rewards of which are long deferred—but the demand for capital for professional training is, strictly speaking, a productive demand, if "productive" be

broadly defined. Now, these demands for capital by consumers are subject to the same law as the demands for capital to aid the production of wealth directly. That is to say, the rate of interest that would be paid for a large sum is less than the rate of interest that would be paid for a small sum. This is so, because the borrowed money would be put to the most valuable uses first. We therefore perceive that capital is subject to the law of diminishing utility, whatever the purpose for which it is demanded. The union of the productive and consumptive demands for capital, combined with the demands of the State and local authorities, which may be productive, makes up the community's aggregate demand for capital.

Why capital is saved.—We have next to analyse the forces of supply. The supply of capital depends upon the power to save and the will to save.

The will to save is governed by complex influences. In order to understand their operations, we must ask why people save. People save for one or all of the following reasons:—

I. To provide for heavy expenses which are foreseen, and for expenses necessitated by circumstances that are recognized as possible or probable.

II. To provide against the chance or certainty of a diminution, or cessation, of the income out of which these expenses would normally be met.

III. To afford the person who is saving a chance of seizing opportunities in the future.

IV. For the sake of direct gain.

V. Because occasionally income is in excess of wants.

VI. For patriotic reasons in times of national emergency—which will be dealt with under State loans in Chapter XXXII.

Upon saving for the fourth and fifth reasons, no comment is called for. As regards the third reason given above for saving, there is said to be a tide in the affairs of men which, taken at the flood, leads on to fortune; but a sum of money

is frequently needed to take it at the flood. Men get chances of entering into profitable partnerships, of starting new branches of work, of being enterprising at the right moment and extending their operations, or of carrying out original ideas of value; and, generally, ~~some private capital is required to enable them to seize these chances, or make the most of them.~~

As regards the first and second recorded reasons for saving, it is obvious that almost every earner of an income has at some time to make arrangements to meet a series of possible, probable, and certain obligations reaching far into the future—there are, for instance, the expenses of marriage, of the education of children, and of illness, accident, and death. In making these arrangements, he has to take into account his present income and his reasonable expectations of future income; bearing in mind that incomes do not always rise as they might reasonably be expected to do, that they may be stopped without warning by the early demise of those who earn them, and that though a man's premature death may put an end to his income, the needs of those for whom he had made himself responsible may continue—of wife and family, for instance. ~~The very uncertainty of the future makes it imperative that a prudent person should save more than calculable probabilities seem to enjoin. He must be prepared for the worst, in so far as he cannot insure against the worst.~~

Does a rise of interest always increase saving? This question is by no means easy to answer, and the answer might not be the same for different stages of civilization. ~~A rise in interest obviously increases that amount of saving which is induced by the allurements of gain in the form of interest.~~ But does it always increase the store laid by for some other reasons? Consider the case of a man who is trying to save a sum sufficient to provide a permanent income adequate for his needs when he retires and for such endowment of his wife and

children as he thinks he ought to make. Suppose he wants an income of about £500 a year. The higher the rate of interest the smaller is the capital sum which will yield this income. Despite, however, cases of this nature, the general impression would seem to be that, when the net rate of interest ascends in advanced countries at the present time, the tendencies to increased saving exceed the tendencies to decreased saving.

Of course, whether a rise in the rate of interest causes an augmentation of the savings of a community or not, (1) a relative rise in the rate of interest paid in any industry attracts a greater proportion of the country's capital to that industry than before, and (2) a relative rise in the average of interest in a country attracts a greater proportion of the world's capital to that country than before.

Saving and the power to save.—As the power to save, other things being equal, is measured by income, we have now to consider how saving increases with an increase of income. Perfectly adaptable persons who were not poor before, when they became better off, would save, other things being equal, the same proportion of their income as before. They would do so because the claims of the future upon them, measured in terms of money, would rise in the degree in which their incomes rose. A man who wanted to leave an income of £100 a year to his wife, if she should survive him, would ultimately want to leave her £200 a year, in all likelihood, were his income to double. He would probably want to do so because he and she, if they were perfectly adaptable, would tend to acquire a standard of living twice as high as their old one if their income doubled. But, as few people are perfectly adaptable, and standards of living get left behind when incomes are rising fast, careful people would save a higher proportion of their income after it rose; while careless people, though they would save no less in amount, would save a

smaller proportion of income than before, because they would not at once realize that their provision for the future was inadequate in view of the higher level of their incomes. So much may be said of those who were not poor before they became better off. As to those who had been very poor, they would probably raise the proportion of their savings when they became better off. When they were very poor, any saving at all would have been so onerous, and adequate saving would have been so hopeless of accomplishment, that they would probably have saved little and taken risks which, with ampler means, they would avoid. A weighing up of these various considerations would clearly seem to sustain the view that a wealthy community will almost certainly lay by a larger proportion of its annual income, other things being equal, than a poor community.

Insurance and saving.—Against many of the burdens which might, or must, fall upon him, and against many accidents which would prevent his bearing them, a person can *insure*. And almost every person will naturally be induced to insure to some extent by the great advantages offered by the system of insurance. Security is attained immediately when we insure, whereas it is necessary for most people to save many years before a sum is accumulated which is sufficient to be of much service with reference to the risks of which an account has been given above and risks to property. Moreover, the individual attains security more cheaply by insurance than by making independent provision. A person who stands alone has to be prepared for the worst, and immediately. But, when he joins with other people in an insurance scheme, it is sufficient if he and the other individuals in the group lay by amounts adequate to meet probable eventualities. The sum that each pays per year is called the premium. My premiums on an accident policy are calculated on the general chances at different ages of accidents

entailing different degrees of incapacity. They are not very high because, though I may be permanently put out of effective economic action by a bad accident the year after insuring, very few of the thousands of people insuring in my office will suffer so grave a mishap so promptly. If I did not insure, but saved independently, I should have to put a large sum aside the first year to be prepared for the worst; and, if the worst happened, I should be less fully prepared for it even then than I would have been had I insured.

~~It does not follow from this account of the economy of insuring that the development of insurance in a country tends to reduce the amount of money saved annually.~~ Insurance companies do and must keep substantial reserves; and, without the facilities afforded by insurance offices, some people would be scarcely provident at all, either because they had not the needful strength of will, or because the accumulation of appreciable resources for the future seemed to them too hopelessly beyond their means. ~~Insurance offices have created a custom of insuring, to which even happy-go-lucky people naturally conform, though they would never be thrifty if left to themselves.~~

~~Insurance, however, cannot meet all needs for saving.~~ There are some chances which are incalculable and indefinable, and others which are non-insurable because insuring against them would substantially multiply them. As regards the latter class, it is plain that if we could insure against losses of income attributable to indisposition to work, some of us would fall victims to the malady of indisposition to work from which otherwise we should have been immune. Again, it is desirable to save so as to have a sum of money in hand to enable us to take advantage of any good openings to fortune that may offer: for the means to seize such opportunities, insurance will not avail.

Interaction of demand and supply.—The conditions of

demand and supply having been analysed, it is a matter of no difficulty to perceive how they act upon one another and produce a market rate of interest. Consider the table below in which examples of demand and supply are placed side by side. For simplicity, assume that there are no risks of loss, that returns are steady, and that no inconvenience, or appreciable work of investing, is entailed on those who provide the capital. When needful, allowance can easily be made for any of the omitted factors. The table must be taken to relate to the *long period* as our present argument is concerned with the long period; but a table setting forth the conditions governing a short period position of equilibrium would be similar in form.

Rate of Interest.	Annual Savings in Million £.	Demand per Annum for New Capital in Million £.
0	15	100
1	20	70
2	40	60
3	50	50
4	55	45
5	60	40

In the circumstances represented by this table, equal quantities of capital would be demanded and supplied per annum if the rate of interest were 3 per cent. Consequently, according to the principles already enunciated regarding the interaction of demand and supply and its consequences, the rate of interest would become 3 per cent and £50,000,000 a year would be invested.

As thus curtly presented, the theory of interest seems simple enough; but this surface determination of the rate of interest covers a complex of inter-related tendencies. It

must be remembered that the demand for capital depends upon the amount of capital already saved and invested, the rate at which it has to be renewed, and the supply of fresh productive ideas which afford opportunities for investment in new directions. It must be remembered also that the quantity of capital which will be forthcoming at a given rate of interest depends upon the income of the community, which in turn depends upon the amount of capital which the community is furnishing and has furnished for production. Were £40,000,000 set by any one year for investment, then saving thereafter would be greater than it would have been had less than £40,000,000 been saved in the year in question; for the larger initial saving would produce in the future larger incomes to save from. Thus, if I had an income of £500 and saved £100 of it one year, which yielded £5 interest, my income the next year would be £505; and, if I continued to save the same proportion of income, my saving in the second year would be £101.

To supplement the tabular statement above, it may be pointed out that ~~there would be some saving even if saving were discouraged by a tax which exceeded its interest earnings—that is, if the net result of saving were in effect negative interest.~~ It may also be remarked that, though theoretically conceivable, a zero market rate of pure interest may be regarded as practically impossible.

Possibility of a zero rate of interest.—But *why should not the rate of interest drop to zero?* a critical reader may inquire. After all, is it so unreasonable to suppose that it should? From the point of view of the community, zero interest simply means that the community is employing the most productive methods—the methods which yield the highest net income. To make use of capital is to adopt a roundabout method of production (pp. 80-82); and if interest is zero the population is so distributed, winning coal and ore,

smelting metal, making machines, using machines and tilling the ground, and so forth, that the real income of the community is maximized. We perceive immediately that this must be so if we think of what is meant by the marginal utility of capital. When we say that the marginal utility of capital is a certain amount—which means that interest must be that amount—we mean that the employment of another increment of capital (i.e. the employment of a little more labour in making machines and so forth) would raise the net income of the community by that amount. That is to say, there must be a net gain from employing more capital so long as the marginal utility of capital is above zero. Why, then, is not capital applied to production until interest drops to zero?

The answer is as follows. Sacrifice must be made in the form of deferment of consumption, or saving, some time *before* the reward is reaped. If the community were a single individual who could depend upon having a very long life, like a nation, and if this modern Methuselah were perfectly rational and far-seeing, capital would *ultimately* be employed until its marginal net returns were zero, providing the individual could make the requisite initial sacrifices, and providing that he did not discount his future because it was future, as he hardly would I should imagine—though this is a controversial point—if he could depend on his future and were perfectly rational. Obviously, he could not make the requisite initial sacrifices, if an amount of work, which left him no time to fashion instruments of production, was needed to provide him with sufficient sustenance, shelter, and clothing, to keep him strong enough to work. This is an extreme case; but the amount of capital which our hypothetical individual could create each year would be limited. *Ultimately*, he would reach the position described. The first year he could only create a little capital. This little would raise his income,

Then he could add to his previous creation of capital a larger amount, and so on ; and while he was working towards the ultimate goal, capital would have a marginal utility above zero.

When we substitute a community for our supposititious individual, the problem is altered in some important respects. A community consists of many people and each person settles the disposal of his own income. All are not perfectly rational ; all are not perfectly far-seeing ; all are not likely to be in a position to make substantial temporary sacrifices, even if the community is very wealthy ; and many discount the future at a high rate. Now, the community must save annually as a whole a certain proportion of its income if the marginal utility of capital is to drop to zero ; and if any individual saves less than this proportion of his income, some other person must save a larger proportion of his income to make up for the deficit. As things are, the deficit to be made up is so great that an appreciable rate of interest results.

Effect of progress on the rate of interest and value of capital.—For our present purpose, it will be sufficient to look at progress merely from the economic point of view. First we shall think of it as marked only by improvement in productive methods, and trace long-period effects. *An improvement in productive methods*, may either raise or depress the marginal demand for the old quantity of capital. On the one hand, it may add to the processes performed by machinery. In so far as it does, it magnifies the marginal demand for the old quantity of capital. But, on the other hand, it may shorten a process already performed by machinery—that is, cut out a link, or links, from the roundabout productive process involved in the use of capital—for instance, render some machine simpler, cheaper, and more productive. In so far as it does this, it reduces the marginal demand for the old quantity of capital, though it augments at the same time the

aggregate value of the old quantity of capital, as every invention obviously must. Whether interest will be raised or not by mechanical discoveries, depends upon the balancing of these two effects, after allowing for the fact that more capital would probably be saved when incomes were enlarged by the improvements in production. A fall in interest would seem, from a study of existing tendencies, to be far more likely than a rise. Of course, there can be no question that a new invention would *at first* elevate the rate of interest, whether it caused a rise or fall of interest ultimately. At first there would be the heavy cost of introducing the new invention; but in the end the cost would be merely that of upkeep and replacement.

Next we have to consider the effect of *social progress*, which means generally that the individual's "telescopic faculty" is sharpened and that he is rendered, not merely more far-seeing, but also more far-acting. The effect would certainly be the saving of a larger proportion of income on the whole. For the few who erred previously on the side of parsimony, the many would have erred on the side of improvidence.

The chances are overwhelming that the two sorts of progress taken together would reduce interest. And, if we unite to these sorts of progress the progress expressed in increased personal efficiency (which enables a man to make more use of machinery, or auxiliary capital of any kind, and therefore magnifies the marginal utility of the existing capital), the rate of interest would probably be depressed still more in the long run; because the consequent increase of wealth, meaning an increase of capital, would probably bring the marginal worth of capital to a lower level than before.

Effect of the appreciation and depreciation of money on the rate of interest.—When a steady appreciation or depreciation of money is *foreseen*, the rate of interest must be affected. Let us work out the case of the depreciation of

money, that is a fall in its purchasing power. Let the market rate of interest, with the purchasing power of money constant, be 4 per cent, and let a steady depreciation of money at the rate of 1 per cent a year be anticipated. Then, to be induced to save as much as before, most people would want an additional 1 per cent over the old rate of interest, or 5 per cent in all, because everything to be bought would rise 1 per cent a year in value. They would want 4 per cent over and above this. And borrowers could afford to pay 5 per cent instead of 4, because what they acquired with the loan would rise in value at the rate of 1 per cent a year, other things being equal.

The effect of the appreciation of money would be the exact opposite. The proof is the same, *mutatis mutandis*. When the depreciation of money stopped, though its purchasing power would be lower than it had been, the rate of interest would be 4 per cent again, other things being equal, as it would be also in the case of the appreciation of money when it ceased.

The earnings and value of fixed capital.—The theory of interest expounded above explains *the rate of interest on new investments of capital, that is the market rate of interest*. The rate of interest on old investments, in so far as the money was not lent at a fixed rate of interest, is also settled in the long run by the marginal worth of the new capital. If the money had been lent at a fixed rate of interest for a term of years, its interest earnings could not be affected by an alteration of the market rate of interest, but its capital value would be affected.

Suppose £100 is spent by the owner of a hosiery factory on a stocking-machine. Let it yield 10 per cent a year gross, that is without deduction for risk and depreciation, and suppose that the market rate of interest gross in the hosiery industry is, and continues to be, 10 per cent. Now let an

improvement be introduced into stocking-machinery, and let time be given for as much capital as is demanded to be invested in the new machinery. The new investments would yield 10 per cent gross. Then the old investment could no longer continue to do so, even if its efficiency were unimpaired. The £100 of our imaginary case would yield an amount determined by the ratio between the efficiency of the machinery in which it was fixed and the efficiency of the new machinery, when both were expressed per unit of cost of the machinery. The use of the new machinery would leave a surplus of £10 gross per £100. If the old machinery left a surplus of £5 gross only per £100, this sum would be its gross earnings; and it follows immediately that, in this event, the value of the original £100 of capital in its fixed form would have depreciated 50 per cent.

Suppose now that productive methods have not changed but that the gross rate of interest for money offered to this industry falls, for some reason, to 8 per cent. Then more money would be put into hosiery factories until the marginal worth of their plant fell to 8 per cent gross. Imagine here and hereafter, for the sake of simplicity, that machinery remains wholly unimpaired until it breaks down completely. Then the original £100 would yield only 8 per cent; but its worth would still be £100. Were the rate of interest to ascend to 12, instead of falling to 8, the gross yield of our original £100 would gradually creep up to £12; and ultimately its market worth would be as before. But its yield would rise only very gradually, because it could only be affected by the wearing out of capital in the hosiery industry. In this case, actually, the efficiency of the old plant would become greatly impaired before the new position of equilibrium was reached; but allowing for this would not alter the character of our generalizations.

If the original £100 of our illustration had been lent at a

fixed rate of interest, its capital value as well as its interest would, of course, be unaffected by productive improvements, on the assumption that the market rate of interest remained unaltered. But, though its interest earnings could not be affected by an alteration of the rate of interest, its capital value could and would. The £100 was invested in 1915, say, at 5 per cent. Let the market rate for such an investment drop to 4 per cent. Then, if the investment were permanent, the documentary claim to the £100 invested in 1915 would become worth £125, because at the new rate of interest it would take £125 to realize an annuity of £5 a year. Were the investment irremovable for a term of years only, allowance would be made for the fact in re-valuation, and the price of the investment of 1915 would not rise as high as £125. Similarly, an advance of interest depreciates the value of earlier investments made at a fixed rate of interest.

Diagrammatic treatment.—A diagram will aid our understanding of the settlement of the rate of interest. In fig. 16 measure capital along OX , the positive rate of interest along OY , and the negative rate of interest (admitted for the sake of argument) along OY' . Ignore the dotted lines. Let D be the demand for the whole volume of capital in use. Let S be the supply curve and indicate, not saving per year, but the amount of capital which would be saved and maintained eventually at different rates of interest, positive or negative, in view of what the income of the community would be for the various amounts saved up. For example, if the rate of interest were zero, then eventually when the income of the community rose to what it would be with Oc of capital in constant use, an amount would be saved each year which would keep Oc of capital in constant use. If capital disappeared at the rate of 10 per cent a year on its not being restored, the annual supply curve of capital would be a curve similar to the curve S , but with one-tenth of its abscissæ. According to our curves, the rate of interest would tend to settle at ab , and the capital in use in the community to become Oa .

CHAPTER XXVI.

RENT AND QUASI-RENT.

Meaning of rent.—The term "*rent*" is made to serve many uses, among which we may distinguish the following:—

1. ~~A periodic payment made for the hiring of anything.~~ This is best called "*hiring charge*".

2. ~~A periodic payment for the use of land, together with any capital invested in it or on it,~~ whether in the form of manure, drains, roads, hedges, gates, and so forth, as in the case of farms, or whether in the form of houses, factories, or other premises, with the conveniences belonging to them, such as gas, water, and drainage connexions. "Rent" has this sense in common usage.

3. That part of the periodic payment for farms, estates, and premises, which may be regarded as a payment for the land alone, apart from the investment of any capital in it or on it. This may be called the "*economic rent of land*".

4. ~~A periodic payment for natural differential advantages.~~ The meaning of "differential advantages" will be explained beneath.

In modern economics "*rent*" is never used technically with either of the first two meanings. Sometimes it is used ~~with the third meaning.~~ But most economists have now decided to broaden the conception of rent and make it cover more than periodic payments for land. The reason for their decision is that some payments for things other than land are settled in exactly the same way as payments for land, so

that they must logically be included if a distinctive law of rent is to be admitted. Unfortunately, perfect agreement among economists is yet to seek, so that a dogmatic definition of economic rent cannot be offered. Most economists, however, make it refer, as they express it, to *periodic payments for "natural" differential advantages; meaning differential advantages which cannot be increased at will*, and interpret "differential advantages" broadly. A differential advantage may be conceived narrowly as a quality possessed by anything which insures it a surplus value over and above the value of the marginal thing (see pp. 38-9) in the class to which it belongs. But just as Nature's provision of things of the higher qualities may be scarce in relation to demand, so her provision of whole classes of things may be scarce in relation to demand. Consequently, in a wide sense, there are natural differential advantages connected with all rare things the supply of which cannot be increased by human effort. It may be questioned, however, whether it is worth while retaining the term "differential advantages," in connexion with rent, when it has to be interpreted so broadly. It would seem to be sufficient to define rent as a periodic payment for rare things that cannot be increased at will. However, in this book, we had better keep to the usage sanctified by custom, and say that *rent is (a) a hiring charge, (b) relating only to differential advantages, broadly conceived, (c) which are natural, i.e. not to be increased at will*; and remember that it refers always to what the payment tends to be in the long run. Some writers confine the application of "rent" to hiring charges with reference to production only; but there is no sufficient reason for not applying it when the differential advantages relate directly to consumption, thus to the case of the superiority of one site over another for pleasure grounds.

Rent of differential fertility.—The theory of rent can be brought out clearly through an analysis of simple imaginary

cases. Taking the case of farming in a particular country, suppose provisionally that the location of a farm does not matter and that only wheat is grown. The value of land per acre in this country, nevertheless, will not be the same for all plots, because of the diversities between plots in respect of fertility. ~~All land is not equally fertile.~~ It may be granted that a limited quantity of the land will have a very high degree of fertility, that a certain amount will be somewhat less richly endowed with fertility, and so on until we reach the land which is hardly cultivable, if cultivable at all. Ranging the land of the country in thought according to its fertility, let us call the best land quality A, the next best land quality B, and the other land qualities C, D, E, and so on, according to degrees of inferiority. When the land is ranged in this way, suppose that its fertility reveals a continuous gradation from the good to the less good, so that there is no great difference between the values of contiguous qualities of land. Assume also that all the land is owned by a small class, some of whom may engage in farming parts of their own land, but most of whom let such land as they can for what they can get, on the English system.

Having thus prepared our data, we may argue first on the hypothesis that the population is too thin for all the land of the highest quality, namely quality A, to be demanded. In these circumstances, farmers would pay little or nothing for their farm land, because, if the owners of the farms tried to exact any substantial land rent, their efforts would be frustrated by the owners of other land of quality A which was not being farmed. ~~Farmers would have the option of moving to the virgin soil,~~ and they would lose little in doing so because *ex hypothesi* the land to which they would move would be as fertile as the land that they left. And the owners of the unoccupied land of quality A would welcome the farmers and accept them as tenants for an insignificant land rent, because

the alternative would be to do nothing with the land and get nothing for it—seeing that the assumption made is that there is more than sufficient of the best land to satisfy all the needs of the community.

Now suppose such a growth of population that the whole of the best land is tilled and recourse must be had to the second best land, that is land of quality B. Instantly, when land B comes into cultivation, the best land will begin to bear a rent. The amount of this rent will be such as to equalize the net earnings of two farmers of equal efficiency and industry, having normal access to capital, the one of whom farms land of quality A and the other land of quality B. That is to say, the rent of the best land will be the whole of the value of the differential advantages which it possesses in its superior fertility. We should say that, in this state of affairs, the land of secondary quality is the land of marginal fertility and the superior land is the land of super-marginal fertility. It is also usual to say, technically, that the margin of cultivation has fallen.

The best land will be more intensively cultivated when the land of secondary quality comes into cultivation. This is a significant point which must not be lost sight of. It should be apparent that a farmer who can get only a limited quantity of the richest land, and must have recourse to inferior soil, will apply more labour and capital than it received before to the superior soil, at the same time that he applies labour and capital to the fresh land which is inferior. If this is not apparent to the reader, it will become so from a study of the numerical example which will be given finally on pages 305-6. It follows at once from the fact that, according to the law of substitution or equi-marginal returns, farmers will work different kinds of land to such degrees of intensity respectively that their marginal returns will be equal. Observe that the law of rent affirms that the positions of farmers of equal intelligence and industry, working good and bad land

respectively, will be made equal by the payment of rent for the good land, after the good land has been worked more intensively. Observe further that it is not the remuneration of farmers per acre worked which will be made equal by the payment of rent, but their remuneration per unit of work done. As superior land is tilled more intensively, it needs more care per acre than inferior land. Hence, a farm of inferior land would have to be larger than a farm of superior land if the tenant of the former was to make as large a net income for himself as the tenant of the latter.

If population advanced so that the margin of cultivation dropped again and farming covered land of third-rate quality, the land of secondary quality would begin to bear a rent. This rent would be determined exactly in the same way as the rent of the best land was determined in the case already discussed. The land of secondary quality would, in its turn, be worked more intensively than it had been before. And the best land would be cultivated yet more intensively, and its rent would rise. The rent of the very best land would then be settled by reference to earnings on third-rate land, just as it had been previously settled by reference to earnings on second-rate land.

It must not, of course, be inferred from this demonstration that as time flows on and population increases, if it does, the price of food should rise as a rule. There are always retarding influences at work in economic progress. Inventions and productive improvements punctuate the passage of time. The control exercised by Nature over man, through decreasing returns, is eternally evaded, and instead, through progress, man's control over Nature is made more complete. Progress may teach how some intractable and comparatively sterile soils can be persuaded to yield abundant harvests; and, in addition, means of transport, which bear on situational advantages (to be dealt with later), may be improved. More-

over, the best land is not necessarily worked first, even apart from considerations of locality: the best land known at the time, when other things are equal, is the first to be worked.

But, even as thus qualified, an objection to this doctrine of rent may occur to the reader. Is it not a fact, he may ask, that it implies a particular system of land tenure? Must there not be a separate doctrine of rent for every system under which land is held for payment? Certainly there must, if we take rent to mean the payment made for land, but not if we take rent to mean a payment for any differential advantages. If, under any particular system of land tenure, the tenant enjoys without payment certain differential advantages of his holding, we may say that they are his by customary right. The payment for them is made when he sells his produce, and the gain is revealed in his income. In this case, we should say that he retained a share of the true economic rent of the land.

Finally, to bring our theory into closer correspondence with the actual world, we may take account of the fact that a piece of land may be devoted to one or another of several different purposes, and that it is likely to have more valuable differential advantages for one purpose than another. This being so, land will tend to be so applied to different uses that, in view of the demand for them, its differential advantages are maximized; and rents will be governed by the differential advantages so maximized.

Marginal value of land.—Let us now premise that all the land has come into cultivation and that there is still demand for more land, so that recourse would be had to yet worse land than the worst in the country if such land were to be found. But *ex hypothesi* such land is not to be found. It does not follow, however, that no more food can be obtained. Although the importation of food may be impossible, it is possible to raise additional supplies of food in the country by

more intensive cultivation. All the land will, therefore, be more intensively cultivated, that is to say, more labour and capital will be applied to the land per acre. The result of this more intensive cultivation will be that *the worst land will bear a rent* while the rents of the superior lands will rise.

The worst land must become rentable because, as population grew, the demand for food would rise. And as, in the circumstances supposed, Nature could only be induced by increasingly lavish outlays to yield additional food, the price of food would rise. This rise in the price of food would place farmers in a relatively better position than before, even in respect of the work done by them on the worst land. Their better relative position would be due to the fact that, when they raised from this land more food until their marginal costs equalled its price, their aggregate costs, including their own normal remuneration, would be less than the sum received for their output, that is price multiplied by output. Then, the competition of the non-farming class for land would obviously bring it about that the value of the improved relative position of the farmer would have to be paid over to the landlord in the shape of rent.

Let us take for illustration a numerical example. A farmer of marginal land, say, when all the marginal land was not cultivated, used to produce 100 bushels of wheat a year at an average cost of 20s. a bushel, including the value of his own work. At the position of equilibrium 20s. would also be the marginal cost of production in such circumstances. Let him now raise another bushel, because the demand for wheat has mounted up, at an extra cost, suppose, of 21s. If it is worth his while to do this, the extra or marginal bushel must sell for its cost, that is 21s. That is to say, the price of wheat must be 21s. a bushel. The farmer, then, would make a gain of 1s. per bushel on his other 100 bushels if he sold them all, that is a gain of £5. He is to that extent better off than the

non-farmers, for the non-farmers have to pay more for their food as well as he. He can, therefore, be forced by competition to hand over the £5 as rent.

Now, *the rent paid for the worst land in these circumstances is not a payment for differential advantages in the narrow sense*, though it is in the wider sense noticed at the beginning of this chapter. Some writers term it "scarcity rent," and term the payment for differential advantages narrowly conceived "differential rent". Occasionally, circumlocution may be avoided by adopting this use of terms.

The payment of rent, which might be a high rent, for the marginal land in our fictitious case is made because the demand for land is intense and there is not sufficient land to meet the demand fully. Before the complete absorption by cultivators of all the land of the community, there was as much land as was wanted of a kind and land to spare. Consequently the marginal worth of land *qua* land was zero. Land was in the same position as air on the surface of the earth. Air has great value, but where there is as much as we want of it and to spare, its marginal worth is zero. The marginal worth of air at the bottom of a coal-pit is not zero, because there a dearth of air is experienced. There, in consequence, air acquires a marginal value above zero. *So, when all the land of a country is in use and yet more is wanted, land acquires a marginal worth which is above zero.* We may say if we like that, in the circumstances supposed, in which all the land is used and more is wanted, the land rent paid for any piece of land which is not marginal is compounded of two distinct payments. These payments are, (1) an amount determined by the positive marginal worth of land, and (2) an amount which measures the differential advantages possessed by that particular piece of land over the least valuable land in use. Fortunately, the world is not in such a position as yet (and probably never will be) that land *qua* land has

any marginal value. There is plenty of land to be had in the thinly peopled parts of the world. The fact that this unworked land is far removed from the centres with the greatest density of population brings it about that land in proximity to those centres bears a high situational rent, the determination of which we shall consider soon.

The student will realize that if the gradations of quality in land are not continuous, as we have supposed on page 299, so that there is a distinct gap between the land of quality A and land of quality B, farmers will have to pay something for land A before land B comes into cultivation, when cultivation of land A has passed a certain point. This payment is also "scarcity rent," according to the distinction noticed above.

Numerical examples.—The gist of this demonstration may be made concrete with the aid of figures which are quite impossible but serve to represent the simplest imaginable case. In the first column of the subjoined table, let the numbers stand for successive doses of labour and capital. By "a dose of labour and capital" is meant a sum of money, say £10, spent by the farmer as he thinks best in cultivating the land. In the other columns, relating to different classes of land, the marginal returns (in bushels of wheat per acre) to different doses are shown—we assume, for the sake of simplicity, that on every piece of land diminishing returns begin at once. Thus, if three doses were spent annually per acre on land, whatever its quality, the marginal returns would be 18 on land A, 17 on land B, and 16 on land C, while the total returns (the sum of the first three figures in the columns of returns) would be 57 on land A, 54 on land B, and 51 on land C. The meaning of the table needs no further elucidation.

Now, if sufficient wheat is obtained when one dose of labour and capital is applied to A, none of land B will be cultivated, as the marginal return on A, that is 20, is higher than the highest return per dose which can be got from land B.

Doses of Labour and Capital.	Marginal Returns per Acre in Bushels of Wheat.		
	On Land A.	On Land B.	On Land C.
1	20	19	18
2	19	18	17
3	18	17	16
4	17	16	15
5	16	15	14

When population grows and B land just comes into use, one dose being applied to B, two doses will be applied to A to make the marginal returns from A and B the same. This will be done because it is the most economical thing to do. If one more dose were applied to B and one less to A, 18 bushels would be gained, while 19 bushels would be lost, which would be bad business. Similarly, when C comes under tillage and one dose is spent on it, three doses will be spent on A and two on B. At this position, C will bear no rent, and the rent of A per acre, in bushels of wheat, will be $20 + 19 + 18 - 18 \times 3$, that is 3, while the rent of B will be $19 + 18 - 18 \times 2$, that is 1.

Now let the margin of cultivation drop another point, so to speak, to 17, and suppose there is no land inferior to C. At once farmers must pay a rarity price of one bushel an acre per year for C, while payments for A and B, where equally the marginal returns will be 17, will be respectively 6 and 3. Of these latter payments, 1 in each case will be the "scarcity" rent, and 5 and 2 the "differential" rents.

Diagrammatic representation.—Consider fig. 17. Doses of labour and capital are measured along OX. In each dose, normal profits are included. The return in wheat is measured along OY. We suppose that the land grows only wheat. P_1 and P_2 are the

curves of marginal returns of two fields. If a return Og of wheat is just sufficient to remunerate a dose of labour and capital, Oa doses will be applied to the one field and Ob to the other, because the marginal returns from each field, ac and bd , must be equal. On the best field $Obdc$ is the total return, and $Obdg$ is needed as recompense for the doses of labour and capital. Then there is a surplus $gdje$. The whole of this surplus is corn rent, or rent in kind. The rent of the other field is obviously $khc - gfk$. If khc equals gfk , this field must be a marginal field. If this field is the worst field cultivated and khc is greater than gfk , then $khc - gfk$ is "scarcity rent". In this case the "differential rent" of the other field would be $gdje - (khc - gfk)$.

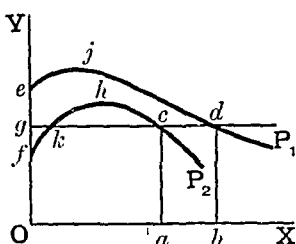


FIG. 17.

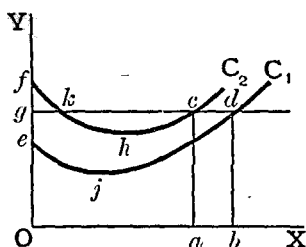


FIG. 18.

The same demonstration is given in another way in fig. 18. In this case, the return of the fields is measured along OX and units of money along OY . The curves C_1 and C_2 represent the marginal costs (including the farmer's remuneration) of different returns. The money rent of the one field will be $gejd$ and of the other $khc - fgk$. The latter field must be the marginal field if $khc = fgk$.

Situational rent of agricultural land.—There are situational and other differential advantages, in addition to those based upon fertility, and rent is governed by these as well as by differential fertility, and in the same way. But "situational advantages" is a vague expression. It may be used very widely to cover all the advantages connected with a particular piece of land, apart from the properties of the soil,—such as accessibility, climate, and beauty of surroundings. Or it may be used very narrowly to denote merely the

relations of the piece of land to other places in respect of communication and transport. Used in the former sense, it includes some of the determinants of fertility. It is sufficient to draw attention to the ambiguity, and to agree, when speaking of agricultural land, to exclude from situational advantages all that affect fertility, on the ground that they are already counted in fertility.

Even if all farming were subsistence farming, the locality of some farms would be preferable to that of others. And locality becomes of immense importance when people farm not merely, or exclusively, for subsistence, but in order to sell their produce. For when they have to sell their produce, they must take into account, in selecting a farm, not only the expense of carrying what is needed to the farm, but also the expense of carrying their produce to market. But when land enjoys differential advantages both in respect of its fertility and of its location, it is impossible to say how much of its rent is due to each, because both enter into the settlement of the intensity of its cultivation.

The following are the important points to bear in mind in connexion with the bearing of situational advantages on the settlement of agricultural rents :—

(1) Both situation and fertility are taken into account when farms are being selected, and farms are preferred according to their aggregate differential advantages.

(2) Consequently, the least preferable land is not necessarily the least fertile, because some of the least fertile land might offer great situational conveniences. Similarly, the least preferable land is not necessarily the least convenient in situation.

(3) The cultivation of inconveniently situated land causes the more intensive cultivation of conveniently situated land. This needs no proof here. The proof is the same as that already advanced on pages 300-1 to show that the cultivation

of inferior land causes the more intensive cultivation of superior land. Phrasing this third point otherwise, we may say that, other things being equal, the most favourably situated land will be most intensively cultivated, just as, other things being equal, the most fertile land will be the most intensively cultivated.

Rent of building sites.—The rent of building sites depends almost exclusively upon the relative situational advantages of different sites. We cannot say “exclusively” because foundations are more easily laid in some land than in others, and the value of a building site is affected by the cost of utilizing it. But this qualification may be forgotten in theorizing because nothing turns on it.

For illustration let us consider the value of sites for offices in some nightmare town in which only offices exist. The convenience of office accommodation, we may take it, diminishes with the height of the floor on which it is provided. We may also take for granted that the cost of buildings, above a certain height at any rate, is more than proportional to their height, despite the fact that one roof serves however many stories there are; because, the higher buildings are, the deeper must the foundations be and the firmer the walls in an ordinary building, and the stronger the supports in frame building. Now assume that a central situation in the town is the most valuable. Then, if the town were built up all at once for a known demand, edifices in the centre would be the tallest and those at the outskirts the lowest. Of course, if the town gradually grew in size, many low buildings might remain for years in the centre, because the value of their cleared sites would have to advance to a considerable figure before it would pay to destroy the capital fixed in them. The distance of the outskirts, and the means of getting to them, would help to determine both the value of central sites, and the height of the buildings erected upon them, so far as height

was elastic in view of building regulations and architectural possibilities.

Suppose a new central building has five stories of the same size let out in offices. Let the costs of production, the same expressed as annual payments, plus costs of management and of upkeep, and letting values be as follows :—

I. Story.	II. Cost.	III. Cost, expressed as an annual payment, plus management expenses and upkeep.	IV. Letting value.
	£	£	£
1	2000	200	500
2	2200	210	430
3	2600	230	370
4	3200	260	330
5	4000	300	300
Total	14,000	1200	1930

For upkeep and management we have allowed £100 a year per story, and for calculation of costs as annual payments we have taken the building at twenty years' purchase. So the figures in column III are obtained by dividing those in column II by 20 and adding to each quotient 100. The second column means that a building of one story would cost £2000, a building of two stories £2000 plus £2200, that is £4200, and so on up to a building of five stories which costs £14,000. The figures are not intended to be typical with reference to some particular style of building, but simply illustrative. If the building were raised to five stories, the top story must be expected to let at £300, since cost tends to equal price at the marginal position. In the fourth column we have the values of the office space provided, plus the value of its situational

conveniences over and above those of similar office space in the outskirts of the town. The conclusion to be deduced from the table is that the annual value of the site is £730, that is £1930 less £1200.

As regards this and all other building accommodation, it should be remarked that the marginal return in convenience, but not in space, must be the same on a central site as in the outskirts of the town and on any other site. Returning to our example above for illustration, suppose that the accommodation afforded in the top of the building can be got in the outskirts of the town for £200. That is to say, for £200 in the outskirts, £200 worth of office space plus zero situational conveniences, that is £200 worth of office conveniences, are obtainable. On the central site at the margin, that is on the top floor, for £300 the same office space is got, which we have valued at £200, and in addition £100 worth of situational conveniences, so that in all £300 worth of office conveniences are obtained. The situational conveniences of this top floor must be worth £100 as that is what the occupier finds it worth while to pay over and above the £200 for which he could get the same office space in the outskirts of the town.

We shall now realize that the theory of situational rent is identical with that of fertility rent, and that there is in fact only *one* theory of rent when "rent" is understood to mean payment for differential advantages broadly conceived. And, as regards the choice of building sites, it has already been laid down that land will tend to be put to its most profitable use. If a piece of land will yield a rent of £10 an acre for agriculture and £20 a year for building, it will be used for the latter purpose, unless it be withheld from the market in the expectation of a rise in its value for building which will recoup its owner for waiting.

Personal rents.—Personal rents are strictly analogous to fertility rents. One employer can get more value out of his

factors in production than another and can manage a larger business. He, therefore, makes more than the other, and, if the other employer is marginal, the excess of the former's earnings is a personal rent. Similarly, a very clever doctor will make more than a doctor of ordinary capacity.

Let us consider particularly the personal rents of employers. Suppose in a certain industry 100 employers survive. We may arrange the 100 surviving employers according to their value in employing. The one of least value, who is nevertheless just valuable enough to keep his position in view of his supply price, we call the employer of marginal value. The remaining 99 employers enjoy super-marginal value in different degrees. Now these super-marginal values constitute differential advantages in production. The employers who possess them will earn more than the employer of marginal value, according to the degrees of their differential advantages, because they can get more value out of a business of a given size, or can manage larger businesses, than the employer of marginal value. These super-marginal earnings are true rents, so far as they are dependent upon natural gifts. And there are others, strictly analogous to them, which may be called rents of circumstances, and are due, for instance, to the fortunate circumstances of birth or position that give men connexions or command over capital. Finally, it remains to notice that there would be a "scarcity" rent element in the earnings even of marginal employees if the supply of employees were strictly limited by the circumstances of nature or of the social system.

As there are great differences between employers in respect of their capacity, and between different parcels of land in respect of their fertility or situational conveniences, so there are great differences in efficiency and application between employees of the same grade. These differences between employees are differential advantages in production, and as

differential productive advantages they have value. A specially rapid and skilful worker will tend to get an extra wage over and above that earned by the worker of marginal capacity in his trade, provided that the payment of this extra wage is not prevented by regulation or custom. This extra remuneration measures the value of his differential advantages in production. Hence there is a rent element in wages, as well as in profits, which is a true rent so far as it depends on natural gifts. Any given wage which is not marginal may be regarded as the marginal wage of a class plus a rent for the differential advantages enjoyed by the worker to whom it is paid.

Rent does not determine price.—The general correctness, but limited significance, of the much misunderstood statement that rent, whether "differential rent" or "scarcity rent," does not enter as a determining factor into price may be made apparent with the aid of examples—I say "general correctness" because a qualification, of some importance, will have to be introduced at the end of this section. Farmers' marginal costs of production, whether on no-rent land or not, settle the price of wheat, so far as it is settled from the side of supply, and in these marginal costs there is no rent element. Had not farmers to pay any economic rent for land, they would charge for wheat as much as before, and produce as much as before. Were they to charge a little less, they would cease to work the no-rent land and would work the rest less intensively. But if supplies were reduced in this way, the demand of consumers would send up price again to the old level, so that the old amount of wheat would be raised. The land that had gone out of cultivation would still be there to bring into cultivation again. Hence, the payment of rent in the case considered does not affect price one way or the other.

Consider again the rent of shops. If a shopkeeper in a shop

on a well-chosen site charges more for his goods than a shopkeeper in an unfavourable position, who nevertheless gets as many customers, the former is in no sense governed ultimately in his action by the fact that he pays a higher rent. He has to pay the higher rent because he can get the higher price, and could get it, rent or no rent. A sufficient number of customers to keep him fully employed are willing to pay somewhat higher prices for the convenience of stopping where his shop is, and the high rent of his shop is the result.

Of course rent enters into price in the sense that rents are paid out of the sums received in the form of the prices paid for things. But it does not enter into price in the sense that it governs price—that it has to be reckoned as one of the costs which make up the supply price of a thing. This generalization holds of all rents, fertility, situational and personal; and it has important consequences.

To the doctrine, understood as it has been enunciated above, there is no real exception, if the question is looked at broadly. And, were it impossible to apply land to more than a single purpose, the doctrine would be strictly true of economic land rent. But, actually, land can be used for many purposes—for pasture, wheat-growing, building, and so forth—and the disposal of land to these several uses is governed by the rents yielded by each competing use. Consequently, if the rent of land employed for any *particular* purpose were abolished, the rents of land put to other uses remaining, land would be transferred from the particular use in question to other uses, and all prices would be affected. Moreover, if all rents were abolished, the disposal of land to different competing uses, which was previously settled by rent payments, could hardly remain unaffected; and if it were altered, prices would be altered. We must allow, then, that rent payments do actually play a part in the determination of the relations between

prices. But this qualification notwithstanding, the doctrine enunciated above does hold broadly. For the supply of land of every kind is a fixed amount, independent of the payments made for it; whereas the supply of, say, capital is not. If interest were not paid on capital, much of the capital would no longer be saved. Consequently we may say that interest on capital governs price, as rent does not, because the former payment is necessary to induce the saving of the required amount of capital.

Rent of mines, quarries, and fisheries.—Mines and quarries differ from cultivated fields in that the latter will go on yielding their harvests for ever, if properly treated, whereas the former contain limited stores which once used up are used up for good. But mines and quarries differ in respect of convenience of situation and the ease with which they can be worked; and the payments for the differential advantages thereby constituted are certainly of the nature of rent. Moreover, using rent broadly, any payments made in respect of marginal mines and quarries are of the nature of rent also, in so far as the limitation of supply which gives rise to the marginal value is due to natural causes. When payments for mines and quarries are calculated from the output at so much per unit, they are commonly called *royalties*. As regards fisheries, it is sufficient to note that they may be carefully worked so as to give a satisfactory yield year after year like properly cultivated land.

Quasi-rent.—The term “quasi-rent” is applied to the periodic earnings of agents in production which can be augmented in supply at will though not immediately. The reason for naming these earnings “quasi-rents” is that they evidently partake of the nature of rent (broadly regarded) when they are considered, not from the point of view of the long-period, but from that of the short-period. Capital, once crystallized in the form of machines of any given kind, is

clearly for the time being in a position similar to that of land of which the supply is fixed. If there is more land than is wanted, all is not used, the marginal land used earns nothing, and super-marginal land earns the value of its differential advantages. If there is less land than is wanted, all is used, marginal land earns something, and super-marginal land is worth the surplus value of its differential advantages over and above this. Similarly in the case of our machines. If there are more than are wanted, all are not used, the marginal machine used earns nothing and super-marginal machines (which are the superior ones of those used) earn surpluses representing the differential advantages connected with the superiority of each over the marginal machine. If there are fewer than are wanted, all are used, the marginal machine earns a sum representing the differential advantages (broadly conceived) enjoyed by the producer who possesses even the worst of these machines, and the superior machines earn surpluses over and above this which in turn represent their surplus values. The analogy is perfect; but by "earning," of course, we must mean net value to the employer, which is not likely to be exactly what is paid to the capitalist if the machines were bought with borrowed money. There is, however, this important difference between rents and quasi-rents, namely that the supply of the things yielding quasi-rents is not eventually independent of their payment, whereas the supply of things yielding true rents is quite independent of their payment. The machines mentioned above would not be replaced as they wore out so long as their earnings were less than normal interest on the capital embodied in them; and if their earnings were more than this, their supply would increase at once. Hence, in the long period, outputs, and with them prices, are governed by quasi-rents. But, nevertheless, the important conclusion follows from our analysis that the earnings, as above described, of the machines in question do

not govern short-period prices. On the contrary their earnings are governed by short-period prices. The proof is contained in the general proof given above to show that true rents instead of governing long-period prices are governed by them.

Results fundamentally identical with those reached above, when the example of machinery was taken, can be obtained by analysis of the short-period earnings of other agents in production which, so to speak, become crystallized, take time in crystallizing, and as crystallized have a limited use only. For example, the skilled workman may for a time get more or less than the long-period value of his skill. That his earnings when in employment can never drop below a certain limit is due to the fact that there are alternative occupations, and that trade unions and social considerations place a check upon the action of competition so far as living agents are concerned.

CHAPTER XXVII.

WAGES AND PROFITS.

THE subject of wages and the earnings of employers for the work that they do are best taken together. Both are payments for living agents in production, and the supplies of labour and of organizing power are interlinked. Yet, from the formal point of view, there is more identity of theory between the doctrine of wages and the doctrine of interest than between the former and the explanation of how the payment for organizing is governed. In succeeding pages, the earnings of employers for the work that they do (apart from payment for their capital) will frequently be denoted by the ambiguous term "profits" for the want of a better. There is no word which unequivocally signifies the earnings of the employer for his productive activities as entrepreneur and industrial organizer, apart from the earnings of his capital. Finally, the various uses of the term "profits" will be noticed.

The value of services supplied by labour alone.—The economic value of labour is so much of the value of the things which consumers demand as is attributable at the margin to the labour engaged in providing them. This is not, of course, to say that they get what they produce—and, indeed, when agents in production work together, it is not possible to think of each as having its own product—nor is it to raise or settle any ethical question. If the things demanded by consumers are supplied by people working without land or capital, there is no difficulty in finding the economic value

of these people. Take for illustration the case of domestic servants, and suppose provisionally that they are equal in respect of efficiency and application. Their full economic value is just the economic value of the services which they supply ; and their wages tend to equal the worth of their services, expressed in money, at the margin, which means where it is just worth while keeping a servant, whether the servant is the only one or one of many in the household. This worth of their services at the margin is fixed by what the community will pay for different quantities of domestic service, and the quantities which will be forthcoming at different rates of pay. So the marginal worth of tea is fixed by what the community will pay for different quantities of tea, and the quantities that will be forthcoming at different prices. But when we go a stage further back in our analysis, we find a difference ; for while the supply prices of domestic service are determined solely by the conditions of the labour market, broadly regarded, the supply prices of tea are fixed by these in relation to the natural productivity of tea plantations and the effectiveness of capital and organization in raising, preparing, and distributing tea.

There were obvious reasons for choosing this simple illustration to begin with, but it is not a very appropriate one because domestic servants are usually engaged for their full time and most households that have any have so few that the wage and the marginal worth of domestic servants to a household are frequently far apart. Thus, suppose the value of full-time domestic servants in a particular household, exclusive of their keep, would be,

for 1, £50,	so that the marginal worth is £50
for 2, £80,	„ „ „ „ £30
for 3, £90,	„ „ „ „ £10

If the market rate of wages were £20 a year, in this household two servants would be employed, and paid £20 a year each,

though their marginal value would be £30 each. In this particular household the wage could not equal the marginal worth, assuming it to be quite impossible to obtain servants for fractions of full time. The number employed in the household being so small, marginal worth and the wage could not be brought approximately to equivalence. Nevertheless, it is true that the wage of domestic servants is determined by their worth expressed in money at the margin of their use, and in some households that touch this margin only one servant may be employed. The wage must equal the value, expressed in money, that would be lost were one servant withdrawn from the community. The household that would sustain the loss would be a household in which the worth of the one servant employed, or the marginal worth of domestic service otherwise, was £20 a year. Housekeepers to whom the marginal worth of domestic service was more than £20 a year, would pay a little more rather than reduce their staffs. In no scientifically managed households would the marginal worth be less than £20 a year, exceptional circumstances apart. And the same may be said with reference to the worth and wage of the servant where one only was employed. It must be added, in qualification of this doctrine, that custom is strong in the settlement of the wage for domestic service.

After this discussion it will be realized that the problem of the wage of servants, on its demand side, is like the problem of the value of, say, motor cars, on its demand side. Here, too, we cannot affirm that the value is equal to the marginal worth of motor cars to all their users, as few people have many motor cars; though we could affirm this of tea or sugar of which consumers can vary their use by small increments. But we can declare of motor cars, as of servants, that on the demand side value is fixed by the demand of the marginal users.

Some light may be thrown on these fundamental ideas about earnings by taking a somewhat different example from traders working on their own account. On the demand side, governing their earnings, is the utility of the work that they do when different quantities of it are done. Consider the exportation of crates of enamelled kitchen utensils to some market, let us say Liberia. If only 1000 crates annually were received in Liberia they would sell, say, for £40 each, but if 2000 crates were received, as the demand would be more fully satisfied, they would not fetch more than £30 each. Suppose 4000 crates get exported to Liberia and realize £15 each. Suppose they can be bought from the manufacturers at £10 each and that the cost of carriage comes to £3 per crate. Then £2 a crate will be the marginal piece-rate worth of the trading work done and traders will earn at the rate of £2 per crate exported. This case is identical with that of domestic service, except that in this case payment is reckoned per piece instead of per unit of time, and that the merchant is not a wage-earner but employs himself.

Wages and profits under group production.—We pass next to the producers of tangible things. Let us consider the construction of furniture. In a simple state of society in which workmen employ themselves, the earnings of cabinet-makers equal the marginal value of what they produce, less the expenses incurred in their work, such as outlay on wood, rent of premises, and interest on such capital as they possess ✓ or can borrow. Now imagine that somebody thinks of employing a number of cabinet-makers, providing them with tools, paying them wages, and selling their product. If he did so, and left them to work just as they had done before, it would not prove worth his while. They would turn out about as much per head as they had turned out previously, and the employer could not pay them any less than they had earned previously, because, if he did, they would prefer to

work on their own account. The employer could, however, make it worth his while to employ them, and worth their while to be employed, provided he could raise their net value per head. And he could do so in various ways, as we have perceived in reflecting upon the economies of group production. He might, for instance, so arrange the work of his hands as to secure a high degree of division of labour in his factory; and, if he were wealthy and enjoyed good credit, he could certainly augment the productivity of his employees by furnishing them with more capital per head than they had normally worked with when independent. It would, therefore, be possible for our employer to offer weekly wages which would improve the monetary position of those who accepted them, and yet leave him with substantial profits after deducting interest on his capital. We may note in passing that some part of the group organization of labour might be carried out co-operatively.

Our imaginary first employer will pay just as much as is needed to induce as many cabinet-makers as he wants to join him. Suppose he must pay 25s. a week, and at that wage can get all the labour that he wants. We have then to consider how many people he will want. He would not want an indefinite number of cabinet-makers at 25s. a week each, for reasons stated in Chapter X. After he had engaged a certain number, he would find that any addition would bring him in less than their wages, because, as his business grew, the degree of detailed management possible would diminish. After a certain point has been reached, the marginal value of labour to an employer must fall.

Now, it should be immediately apparent (see pages 96-7) that the employer will want just so many men that the addition of another man would increase his net returns by no more than the wage paid, namely 25s. a week. In the technical language to which the reader has become accustomed,

it is commonly said that the employer will enlist labour until its marginal worth to him drops to 25s. a week. Strictly speaking, we ought to say that wages are determined at any one time by the discounted employer's expectation of the marginal effects of labour upon the product, because wages are as a rule paid before the product of the labour for which they are paid has been sold. In a competitive system, this expectation should closely correspond with fact, because persons without judgment are eliminated from the industrial field. We assume, of course, that for any quantity of labour the quantity and arrangement of the other factors in production will be the most appropriate possible in view of their cost. The remuneration of the employer for the work that he does will be the aggregate value of the output, less interest on capital, wages, and other expenses.

Next, let us advance a step nearer to actual affairs by allowing for competition among employers. Before there was competition our original employer decided to engage, it may be, 150 men at a wage of 25s. a week each; but after the appearance of competition he might have to revise his decision. There might be so many men anxious to make a profit by employing labour, and able to make a start, that there would not be enough labour for them to get 150 men apiece. In fighting with one another with the weapons of business, and out-bidding one another to entice labour, they would force wages up, and the average size of the business (reckoned in numbers employed), and profits, down. The progressive shrinkage of expected profits, as competition ground out its results, would discourage some of the possible employers, and fewer and fewer would be left who found it worth while to continue struggling for a place.

Finally, suppose a state of equilibrium is reached at which there are 100 employers who absorb all who are willing to be cabinet-makers at the wage paid and make for them-

selves, apart from interest on capital, £10 a week each. Let each employer have 110 hands whose marginal worth to each employer is 30s. a week, which will be the wage—we are assuming provisionally that the employers are equal in ability and have equal control over capital. It must be then, in the case imagined, that there are just 100 men able and fit to be employers who will do the work of employing for £10 a week. If profits were higher, more people would be attracted to the business of employing in this trade; if profits were lower, fewer people would be attracted to the business. Thus, the earnings of employers are settled by employers' supply prices of themselves (or what they will work for) and the profits to be made when different numbers of employers are in the field.

Notice the remarkable similarities between the determination of the earnings of the trader and the determination of the earnings of the employer as industrial organizer. The trader makes his earnings out of distributing commodities appropriately, that is, so to speak, out of arranging them in such a fashion in relation to customers that their value is enhanced; while the industrial organizer makes his earnings out of arranging his factors in production in such a fashion in relation to one another that their value is enhanced.

Allowance for differences in efficiency between employers.—The demonstration above is highly abstract. We shall correct it to make it an exact analytic presentment of actual affairs as we go on, beginning at once. We have supposed that those aspiring to be employers are all equally well equipped with ability of the right sort, control over capital, and perseverance. This, of course, cannot be, as the most limited acquaintance with human nature will convince us. So we must say that the would-be employers who survive in the competitive struggle are those who are the best

equipped generally and have the greatest opportunities. They are also the persons who are ready to do the work of organizing for the lowest pay, other things being equal. Hence it might come about that, of two employers at the margin, the one would be more efficient than the other. The other would manage to keep his position because he put a lower reserve value on his labour. In the world of our previous abstraction more than 100 men have the opportunity and would be willing to do the work of employing, but only 100 we suppose have such efficiency that they could make enough to induce them to do it. Aspirants other than the successful 100 are squeezed out by competition. By "efficient" in this statement we mean valuable for employing purposes generally: as we have perceived, of two men equally valuable for employing purposes, the one may be cleverer at industrial work, but the other may make up for his deficiency in this sort of cleverness by astuteness as a commercial man, or by his greater command over capital.

~~Between established employers there will be great differences in respect of efficiency.~~ In consequence of these differences, in the same industry *all businesses, even if fully grown, will not be of the same size*, however we measure size. This is a point which has been explained already on pages 92-7. Turning to these pages, we see that in any industry businesses will be found of various magnitudes and of various types of organization. The admission of this fact, and of the fact that some businesses are small because they are only growing up, does not invalidate the demonstration given of the settlement of wages and profits, which remains sound in principle. In order to make it applicable to the more complicated circumstances now recognized, we have merely to make it more complicated—not to alter its character. It is because of natural differences in efficiency, which make differences in the sizes of businesses and average costs, that the

differences in employers' earnings arise which have already been classed as personal-rents.

Definition of profits.—Profits cannot be concisely defined as the term is used indifferently to cover all or some of the following payments:—

1. Industrial interest (gross interest).
2. Industrial interest less certain charges such as insurance and payments against depreciation of plant.
3. Payment to the employer for his exercise of the undertaking function, which has an industrial and a commercial side.
4. Payment for industrial organizing.
5. Payment for commercial direction.
6. Payment for detailed managing.

The functions distinguished in this tabulation are explained in Chapters VII and X. As to the sense in which "profits" should be used, it is impossible to dogmatize, since the current usage of the word is so elastic. But it would certainly be a great convenience if the term "interest," qualified according to its application, were always used to indicate payments 1 and 2; if 3 were called "undertaker's profits"; 4, "organizing profits"; 5, "commercial profits"; and 6, "payments for business management".

Supplies of labour.—We have learnt what constitutes the demand for labour and how it settles the wages of labour, but we have yet to learn how the supplies of labour of different kinds offered in different industries are determined. The supply of a particular sort of labour cannot be regarded as fixed, because population may expand or contract and also because a man can choose between different occupations. That the level of wages has a bearing on the rate of increase of the population, nobody would venture to deny in face of the facts. But population is governed by other things besides wages, and the influence of wages appears to vary from

period to period and from class to class. The problem of population as a whole is so perplexing, and our notions about it are in many respects so vague at present, that nothing would be gained from attempting any detailed analysis of it in this treatise. We must, however, discuss at some length the way in which a given population gets distributed amongst the industries of a country, because this has a most weighty influence both upon the general level of earnings and upon the ratio between earnings in the several occupations of the country.

The labour of a country is not all of one sort. We may think of it as divided up into a number of *grades* or *classes*. Thus, there are (1) unskilled labourers, (2) skilled artisans, (3) the lower-middle classes, (4) the upper-middle classes, (5) the wealthier, or predominantly-capitalistic, classes. This classification is sufficient for our present purposes, but in a more advanced treatment of the problem of the supply of labour, it would be necessary to make a more elaborate classification. Such as it is, it must be noted that the above classification refers to economic characteristics only, and not at all to social characteristics, since it is economic characteristics that we have primarily in view in Political Economy. The position of any individual in the labour-grades of the community is settled in part by the position of his parents, in part by his capacity, in part by his enterprise and in part by the level of earnings in different grades. The extent to which it is settled by his capacity depends upon the extent to which parents are ambitious for their children; the extent to which the former have the means, and the requisite knowledge, to prepare their children for better positions than those occupied by themselves; and the extent to which educational facilities are offered to the rising generation.

A number of occupations, calling for the same sort of capacity, belong to every recognized grade of labour, in the sense

that they are recruited almost exclusively from the grade in question. Once a man has started in a trade, naturally it is not easy for him to change, though it is not impossible ; but between the occupations belonging to any one grade, the free disposal of the labour of the rising generation is but slightly restricted. A child still inclines to follow his father's calling, but under modern conditions it is almost as easy for him to enter any of the callings which effectively appeal to the class to which the father belongs. Hence, in so far as the trades filled from one grade of labour are equally pleasant, the wages paid will tend to be the same *cæteris paribus*. If in one of such equally pleasant, or unpleasant, trades lower wages were paid than in the others, the flow of labour into it would be checked, and the check would continue until the numbers in the trade had so dwindled that the wages paid in it rose again to the normal level. But, in so far as the different kinds of work offered to labour of one grade differed in agreeableness, there would tend to be a difference in wages, because, other things being equal, people choose the most comfortable situations. To get adequate supplies of labour, employers in the industries in which work was disagreeable would have to offer wages somewhat above the normal level for the kind of labour that they wanted. So we may conclude that differences in wages within each grade will roughly measure the amenities or discomforts of different occupations. Such a conclusion seems to conflict with the well-known fact that the most disagreeable work is generally the worst paid ; but this happens to be the case because most of it requires little skill and falls to a class which is relatively numerous. Of course, whether a calling is found to be pleasant or not is largely a matter of individual taste, and this fact must also be allowed for when we frame our final conclusions. The wages in different occupations in the same grade will also tend to vary with the cost and length of training required and the probability of

success and of regular work, though it may be that uncertainties are apt to be under-estimated.

It will be remembered that the degree of the flow of labour between trade and trade in the same grade is known as the degree of *horizontal trade-mobility of labour*. It must be distinguished from *geographical mobility*, which refers to the degree in which labour is attracted from place to place by the prospects of better wages. The degree of horizontal trade mobility of the rising generation is high, because, in the plastic age, a person can easily take up any one of the occupations for which he is suited.

Competition between grades—vertical mobility.—The various grades of labour have been termed *non-competing groups*. But they are not entirely non-competing, though it is true that labour moves less easily, whether in youth or later life, from one grade to another grade than from one trade to another trade within the same grade. We may, therefore, affirm that the level of earnings within a grade, in relation to the levels of earnings in the grades above it and below it, do govern to some extent the proportion of the population within that grade. But it cannot be declared off-hand whether a grade will increase in numbers or not when the incomes made by those who belong to it rise relatively to the incomes earned in other grades.

Thus, let us take the grade which we have termed the lower middle-class. Let us suppose that earnings in this grade increase and that earnings in other grades remain unchanged. Now, whether the lower middle-class grade will contract or expand relatively, depends upon the degrees of the inflows and outflows set up by this increase of earnings. Its ampler earnings make the lower middle-class grade more attractive than it was in relation to the artisan grade; hence we may expect more people to climb into it from the artisan grade. But, at the same time, the higher middle-class grade

is made relatively less attractive to the lower middle-class than it was when the lower middle-class were not so well off; hence we might expect fewer of the lower middle-class to pass upwards into the grade of the higher middle-class. There are two reasons, then, for supposing that the lower middle-class will grow in numbers in the circumstances imagined. Forces are generated which tend to check the depletion of this class, while other forces are generated which tend to insure its more rapid recruiting. But we must not go too fast. Yet a third set of forces begin to stir. The degree in which a lower class contributes to a higher class depends not merely upon the *will* of its members to do so, but also upon their *power* to do so. Now the elevation of earnings of the lower middle-class enhances their power of placing themselves or their children in the higher middle-class, because money in this matter is power. Consequently, after the incomes of the lower middle-class had increased, some of that class, who would not have risen otherwise, would be enabled to push into the higher class. The upward flow brought about in this way might conceivably counteract the other tendencies already described, so that actually the lower middle-class would lose in numbers.

As regards the lowest class of all, that of the unskilled labourers, it is more likely than not that its prosperity will relatively deplete it, because there is no lower class for it to draw upon, in order to make up for the loss of those who are aided in their advancement to a higher grade by the augmentation of their wages, or the wages of their parents or relatives. The lowest economic grade of labour does not, of course, compete directly with the highest, at any rate to a noticeable extent. But it is brought appreciably into competition with the grade just above it, in the manner portrayed. And the grade just above it is in turn brought appreciably into competition with the grade just above itself. Competition in this

way links up grade and grade from the top to the bottom. So the lowest grade of all does compete indirectly with the highest grade of all.

This sort of fluidity of the population is known as the vertical-mobility-of-labour. It is probably slight among older people. And it is not so great among younger people as it is possible to make it; though progress in this respect has been marked. It should need no demonstration to convince the reader that the more easily people move vertically to the kind of work suited to their capacities, the better is it for society as a whole. The man who gets on, and by getting on adds to the supply of organizing power, or displaces somebody else who otherwise would have filled his position less satisfactorily, benefits not only himself, but also the community at whose disposal his superior services are placed.

Conclusions as regards the determination of wages.—

We have now completed our analysis of the conditions governing the supplies of labour offered to the different industries of the country. These conditions of supply, taken in conjunction with the conditions of the demand for labour, analysed at the beginning of this chapter, account broadly for the wages paid in the several industries of the country. Our conclusion, which should hold approximately, is that in any industry the quantity of labour employed will be that quantity for which the supply-price and the marginal worth of labour to employers are the same amount, and that this amount will be the wage. By the supply prices of labour in a given trade are meant the wages at which different quantities of labour will be forthcoming for that trade. The effect of trade-unions on wages will be discussed later (pp. 345-6).

As regards the contention that the standard of living plays a dominant part in the settlement of wages, we may at once concede that it plays a very large part. But the forces operating on the side of demand must not be left out of

account. Wages cannot depart far from the marginal worth of labour. The standard of living is, however, effective in driving a man to reach a marginal worth the money expression of which is sufficient to maintain his standard of living. A man may reach the desired marginal worth by making special efforts to find the work which just suits him and by putting the best of himself into his work. People will make special efforts to keep their incomes sufficient to maintain their standards of living, which have reference not only to themselves but also to the bringing up of children. In order not to slip down in the social grade and be forced to contract his standard of life, a man would usually work very hard and put himself to no end of trouble and worry, would change his home and trade if need be, which otherwise he might never have dreamt of doing, and even defer marriage if he is unmarried. Moreover, there is the action of trade unions to preserve standards of living to take into account. To an extent, therefore, the correct theory of wages is a "subsistence theory". That it is also a "productivity theory" is obvious.

Finally, a summary may be offered of the influences affecting wages. When the efficiency of labour rises, through training or otherwise, and when labour is more appropriately placed, its marginal value is practically certain to be raised, so that wages rise. When the marginal ability of employers is raised, since they make better use of labour, and its marginal utility is thereby raised, wages rise. When more people are enabled to force their way into the ranks of the organizers, since more organizing is then done and organizers are stimulated to their best endeavours, the marginal utility of labour is raised and wages rise. The more employers, or would-be employers, there are to compete with one another, the better is it for labour. Finally, as inventions are made, and more capital is saved, it is practically certain that the marginal utility of labour will be raised so that wages will rise.

The doctrine of the wages fund and the iron law of wages.

—*Wages, it has been said, depend upon capital.* It is just as true to say that profits and interest depend upon labour. Wages do depend upon capital in the sense that the more capital there is the higher wages are ; for the more aids to production men have to work with the more wealth can they make. It was not, however, in this general sense that the statement with which this paragraph begins used to be made. By it was meant that wages were governed entirely by the amount of wealth which was predestined, so to speak, for the payment of wages. Such wealth was known as the wages fund, and the statement was known as the "*wages fund doctrine*". It was to this doctrine that expression was circuitously given when it was laid down that "demand for commodities is not demand for labour". The amount of the wages fund at any time was supposed to have been definitely fixed by antecedent conditions, so that any increase in the efficiency of labour or improvements in productive methods could not for a time affect wages. This view is radically wrong, if "for a time" is to be understood as meaning "for a lengthy period". If those who adhered to the wages fund doctrine had allowed that the time might be only a few days, or weeks, their position could have been so defined as to be theoretically unassailable.

Of what, we must inquire, was the wages fund supposed to consist? It was sometimes conceived as money, sometimes as goods. But if conceived as money, it is evident that the fund is highly elastic. Expectations of the profits to be derived from different courses of action determine employers in deciding how much to spend upon industrial wages, how much upon plant, and how much upon themselves. Expectations of the profits to be made out of employing labour determine, too, all other people with money in deciding how much to invest in industry. It, therefore, dawns upon us, when we think of the wages fund as money, that it is a highly elastic fund which instantaneously, by swelling or contracting, accommodates itself to any alterations in the value of labour. A rise in the value of labour means magnified expectation of profit, and it means, therefore, on the instant almost, a corresponding rise in the wages fund.

If the wages fund is conceived as goods, the doctrine of the wages

fund equally melts away. For, then, the doctrine asserts that the stock of goods which can be consumed by workmen is for an appreciable time fixed in amount. But the goods of the world cannot be divided into workmen's goods and other goods. No doubt you could pick out goods which would only be consumed by workmen, like corduroy trousers, and goods which would only be consumed by wealthy people, like diamond tiaras. But when you had selected all the goods which could be earmarked on inspection as of such a character that they could be consumed only by the working classes, a large mass of goods would remain over which could be consumed by these classes or other classes. Workmen, as well as people with higher incomes, can ride in motors, wear smart clothes on holidays, and go to the theatre. When the employers' demand for labour rises because high profits are anticipated, money wages rise, and more of the class of goods not earmarked by their character for use by a particular class find their way into workmen's homes, or are otherwise appropriated by the working classes.

Again, the quantities of most commodities of any kind in existence can be very rapidly increased. There exists in a country at any one time a certain quantity of finished articles ready to put into the hands of consumers, a certain quantity of articles which need another process to be performed upon them before they are ready for consumers, a certain quantity which require two more operations to be performed upon them, and so on almost indefinitely. Many of the articles nearly finished may be finished so as to be suitable for consumption by workpeople or by others, and a much larger proportion of the goods which are not nearly finished can be worked up into such a form that they meet the demands of workpeople. Almost on the instant the proportions of goods of different kinds in the world can be altered. So the supposed fixed wages fund of workmen's goods vanishes. It is seen to be a well-nigh indefinitely expansible fund. It expands as expectations of the profit to be made out of employing labour expand.

The wages fund doctrine was publicly interred many years ago. It is merely referred to now because it was so famous and is still remembered; and because truth can sometimes be discovered by criticizing error. For the same reason we may also notice a kindred theory of wages, known as the *iron or brazen law of wages*, which

used to be held many years ago. It proclaimed that wages could never for long be sufficient to provide more than bare necessities for the labourer and his family. If wages rose above the bare subsistence limit, it was thought that population would increase until, through the excess of labour, they fell again to this limit. The theory may have been roughly true of the peculiarities of the time when it was put forward ; but that it is not applicable to Western communities to-day, the facts relating to population make abundantly plain.

CHAPTER XXVIII.

SUMMARY OF THE THEORY OF DISTRIBUTION—PRODUCERS' SURPLUS AND LABOUR PROBLEMS.

Summary of the theory of distribution.—The gist of the theory of normal distribution under conditions of group production is as follows. Under group production value is created by organized collections of capital, land, and workers of various kinds, which function in unison under the direction of an employer or employers. We cannot say that so much of the output is produced by the capital, so much by one class of operatives, so much by the land or the material derived from it, and so forth, any more than I can say that so much of the manuscript of this book was produced by my thought, so much by my hand, and so much by my will. In somewhat the same sense in which the manuscript of this book must be attributed to my faculties and bodily parts regarded as making up an organic whole, must the output of a business be attributed to the several agents or factors in the business regarded as making up an organic whole. How, then, is distribution among the factors or agents of the business fundamentally governed?

It could not be governed by any definite principle, if the organic simile used above applied strictly to production. If industry were carried on by agents combined in groups, of which the constituents could not be varied in quantity, distribution between the constituents would be a scramble. But, as a matter of fact, the employer can increase or decrease

~~the quantity of any factor in production that he employs, say labour, and though it is meaningless to speak of the share of the output due to labour, it is possible to tell how the output increases with an increase of labour. This return to labour at the margin governs the demand for labour; and, with respect to employed agents, the units of which in each class may be provisionally taken as equal in efficiency, distribution is settled by demand and supply. Demand in this connexion means the marginal worth to employers of different quantities of each factor, in view of the supplies and costs of other factors, both employing and employed. Supply means (a) the quantity of any factor in production, if its quantity offered for employment is temporarily or permanently fixed, or (b) the quantities which will be forthcoming at different prices or earnings. The remuneration of an employed factor will tend to equal its marginal worth, on the one side, and its supply price, when it has one, on the other side. The marginal worth of employed factors depends *inter alia* upon the supply of organizers, and the supply of organizers depends upon what they can earn, that is upon what is left over in a business when all the employed factors are paid for.~~

Another way of putting the theory when all employed factors have supply prices, is to affirm that employers try to adopt the most economical of the innumerable combinations of factors in production which are theoretically possible. The most economical combination is that which, in view of the cost of factors, yields the greatest profit. It has been demonstrated in earlier chapters that the most economical combination of factors in production must be that in which the marginal worth of each factor equals its cost. Then, the position of equilibrium is obviously reached when the organized businesses are such in character and number (a) that the earnings of employers equal their supply prices (assuming employers to be similar

in efficiency), and (b) that the quantity of each class of factor employed (assuming that its units are similar in efficiency) equals the quantity which will be supplied at the price paid when it has a supply price, or equals its supply, if this is limited, or is such that its marginal worth is zero (for instance in the case of land where any amount is to be had).

To complete the theory of normal distribution, we have simply to add that factors in production which possess differential advantages in production tend to be paid, in addition to the normal remuneration of factors of marginal efficiency, the full value of their differential advantages. These extra payments are called rents.

Obviously, if we like, we can so shape our abstractions that "differential" rent payments are merged in payments to cover marginal worth. For example, we have simply to take all the labour in an industry which enjoys differential advantages of a given amount, and treat it as an independent class of factors in production. This class would get its marginal worth; and its marginal worth would equal the value of its differential advantages plus the marginal wages of the group of labour from which the special class was abstracted.

In conclusion, it may be as well to warn the reader again that this beautiful theory of distribution is not literally true, in the sense that it is precisely applicable to the working of the social system. Our generalizations hold only of *tendencies*. With the understanding of these tendencies, we are making only a beginning of an understanding of the social system. Of large sections of the business world the theory hardly holds at all. It is as if we were studying some machine, and had satisfactorily grasped the principles embodied in it, assuming a perfect fit of parts such as Vulcan alone could forge. We should have to observe next how imperfectly the machine was constructed, and discover and allow for the actual quality of its metallic limbs. But this analogy must not be allowed to

lead us astray: we must *not* take for granted that the ideal or perfect society is that which our theory would exactly fit.

Producer's surplus of satisfaction or utility.—A close analysis of man's productive activities, in connexion with their remuneration, reveals a sort of surplus strikingly analogous to the consumer's surplus which a close analysis of man's consuming functions, in connexion with the prices of the things consumed, brought to light. The surplus revealed on the productive side is known as producer's surplus of satisfaction or utility, which is to be distinguished from "producer's (money) surplus," meaning the sum left for employers after paying expenses.

Broadly speaking, the consumer's surplus of utility obtained from consuming a thing means the difference between what the consumer gets in utility and what he gives up in the form of the money paid for the thing. What he gives up can be expressed in utility, as we have seen, because of the conception of the utility of money (see pp. 47-8). Hence, to be strictly analogous to consumer's surplus of utility, producer's surplus of utility should mean the difference in utility between what a person gets from working and what he gives up in working. Now, in reckoning what a person gets from working, we must leave out of account the consumer's surplus reaped in the expenditure of his wage, because this is already counted in consumer's surplus and it is desirable to keep the two surpluses distinct. What a person gets from working, then, consists in two things: first his wage, which expressed in utility means the amount of the wage multiplied by the marginal utility of money; and secondly—an element which is apt to be overlooked—any utility in the form of gratification yielded by the activity of working. What a person gives up in working consists in any disutility suffered in the course of the work and as a consequence of it. When the sacrifices are deducted from the gains in utility, a balance

of utility normally remains. For it seldom happens that every hour of work means a disutility at least equal to the utility of the money earned by it. In most cases, some of the hours of work are tiresome, to say the least, but some are less tiresome than others, and some may actually be enjoyable. Generally speaking, from most kinds of work we derive some direct satisfaction. We may start the day's task with groaning of spirit, because of the inertia to be overcome, but, as we get into the swing of the work, exhilaration usually supervenes. After a time, however, monotony begins to tell, or exhaustion is felt. If we continued our toil long enough, disutility or dissatisfaction would certainly take the place of utility or satisfaction, and steadily increase. So we may think of the week's work as producing so much disutility and so much utility directly, in addition to the wage; and the utility of the wage (apart from the consumer's surplus connected with it) is almost bound to exceed any balance of disutility associated with the activity of working.

Just as consumer's surplus can be expressed in money (see pp. 52-3), so, of course, can producer's surplus; and, just as the money expressions of the consumer's surpluses of many persons can be added together, so can the money expressions of the producer's surpluses of many persons. Producer's surplus is apt to be overlooked because it cannot be independently bought. But, for the attainment of the utmost real economy in production, its recognition is essential.

Diagrammatic exposition of producer's surplus of utility.—

In fig. 19 measure the daily hours of labour along OX, utility along OY, and disutility along OY'. Suppose, for the sake of simplicity, that labour is paid at a fixed rate per unit of time; and suppose further, for the same reason, that the utility of money is independent of the length of the working day. Let the curve *ke* indicate, by the heights above OX of successive points on it, the additions made to the utility derived from consumption by the

increases of the daily wage as the hours of labour per day increase. Let the curve fhg indicate similarly the way in which the utility (positive or negative) of working varies with the working day. Let the working day be Oc . When the worker can effectively control the length of the working day, it would tend to be such that ec equals cg . To work longer would be to suffer a disutility greater than the utility got from the wages for working longer. When the working day is Oc , the worker's consumer's surplus will be kdc . And his producer's surplus will be, according to the view of producer's surplus expounded in this chapter, $Oced + ahb - Ofa - beg$.

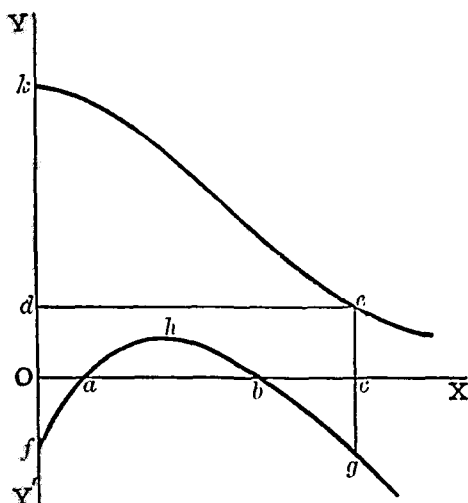


FIG. 19.

The hours of labour.—The question of the hours of labour may fitly engage our attention at this juncture. As the employer need not himself work all the time his factory is running, to take the case of a manufacturer, he will be governed in his attitude to the question of the normal working day, other things being equal, by the productivity of labour in the long run when toiling different hours per day. Now the value of labour, in relation to the hours of work, in every

industry must be subject to variations similar to those shown in the table beneath for imaginary circumstances :—

Hours per day.	Value of Labour per week in shillings.
6	34
7	38
8	40
9	41
10	40
11	39
12	37

The fall in the value of labour after the working day exceeds nine hours, in these imaginary circumstances, is due to the fact that impaired vitality—physical, mental, or moral—or irregularity (where that is possible as in the case of colliers) after a time reduces the productivity of labour, directly or indirectly.

Evidently, in this case, it would be to employers' interests to run their businesses nine hours a day. But far-sighted operatives would almost certainly prefer a shorter day because the ninth hour only makes a difference of 1s. a week to their value—and so to their wage—and, even if working the ninth hour is no strain, an extra hour's leisure a day is likely to be worth more than a shilling a week. We are treating now, it must be remembered, of long-period results, which may not be fully realized, and, so far as they consist in the ultimate effects of the reduction of working hours on efficiency, are apt to be overlooked by everybody.

Actually, any difference between employers and employees, as regards the duration of the normal working day, is settled by bargaining. There is no appreciable difference to settle when there are *shift* arrangements in use which are such that shorter hours for the workmen do not entail short hours for the machinery. Shift arrangements which lengthen the working day of machinery are economical because they enable more value to be squeezed out of each unit of capital,

upon which interest must be paid even for the hours when it is at rest. Doubling the working time of capital would have roughly the same effect upon the national production, in the long run, as doubling the quantity of capital. But, to shift systems, objections may be urged from the social point of view, and from the point of view of health, as well as certain economic objections. Whether in any industry their adoption should be approved, or recommended, can be settled only by a balancing of advantages against disadvantages. In some industries, where processes must be continuous, they are unavoidable.

The more severe the strain of work and the more monotonous the work, other things being equal in each case, the shorter will be the working day demanded by labour. And the higher the wage per hour, the briefer will the operative desire the hours of toil to be, other things being equal. For, with the higher wage, a little more leisure is likely to be sought as well as a little more of all other goods, especially in view of the fact that the value of leisure is enhanced by an advance of earnings. But we must not omit the qualifying "other things being equal," because the higher wage, which enabled the operative to get more nourishing food and more comforts, might so raise the level of his vitality, or alter his outlook, that he would want to work longer and earn more.

Another determining condition of the normal working day is the amount of *over-time* to be expected in a trade within a given period. Over-time permits of elasticity of output, which is of more importance in some industries than in others, but it may be grossly abused. The higher rate commonly paid for over-time checks its abuse. Why this higher rate has become so common, is explained by the fact that the average disutility of exerting oneself for pecuniary gain is much greater during the period of over-time than during normal working hours.

Progress is affecting the duration of the time devoted to earning an income in a variety of more or less obvious ways. Machinery is assuming the heaviest tasks in the world, but the nervous strain of work is probably being intensified under modern conditions; rising wages are removing the necessities which forced many people to labour almost unceasingly, and are causing leisure to be more highly appreciated; while education is also making leisure more valuable, and at the same time, both directly and through its reaction on productive methods, tending to render much work more absorbing. Generally speaking, an outstanding effect of progress under the most advanced conditions has been that many operatives while working for wages have had to draw increasingly on their nervous strength and mental energy, though called upon to toil for fewer hours in the day and fewer days in the year.

Collective bargaining.—In advanced communities the system of settling wages and the hours and conditions of labour through the medium of organizations of masters and men is spreading. This system, which is known as collective bargaining, and means that the professional expert displaces the individual in voicing the forces of demand and supply, must result in greater uniformity of conditions. We cannot discuss here its merits and demerits, nor the policies which have been pursued by employers' associations and trade unions in giving effect to their views, as the issues involved are highly controversial; but we must notice the broad effects of trade unions on distribution and the conditions of labour.

Trade unions can do a great deal to better the general conditions of labour—to secure that factories shall be healthier and brighter and the operatives more comfortable at their work—both directly and by pressing for legislation. Workmen, when they act individually, are much less likely to bring about improvements of this kind; and the march of reform is made easier for employers when at each step all competitors

are kept in line. The individual employer, as well as the individual workman, frequently finds the dead-weight of inertia in the surrounding system too much for him, however anxious he may be to ameliorate the conditions of labour.

Upon wages, as well as upon the general conditions of labour, trade unions also have a marked influence. If in any trade wages tend to settle at a level beneath the marginal worth of labour in that trade for the time being, the trade union can at least lever wages up to its marginal worth without causing any displacement of labour; and it is alleged that the recompense of workpeople does tend to be kept on an average, by a sort of social friction, at a level beneath their marginal worth when earnings are settled competitively without any concerted action on their part. Moreover, trade union organization may raise the marginal worth of labour by raising people's efficiency. A calling may get "professionalized" when it is organized in a trade union, so that standards of diligence, regularity, and good workmanship, come into play. But trade union action of an opposite kind, aimed at levelling down efficiency and reducing the individual's output, would be almost certain to exert a depressing influence upon wages; though it must be recognized in qualification that when the operative is driven or induced to work at high speeds, or for long hours which are detrimental to his health, a curtailment of his work would bring a balance of gain in the long run both to the operative and the community.

The effects that we have considered so far may be large, but the operatives in particular trades or sections of trades can do even more through their unions, and force up their wages still higher. In many cases it is difficult to do this, because there may happen to be an easy alternative method of obtaining the commodity which they help to produce; or the demand for the commodity may not be very elastic; or their wages may be a large part of the total expenses of

production of the commodity (so that a rise in their wages will greatly raise its price and diminish the demand for it); or the other classes of workers with whom they are associated in production may check them by attempting the same. But the powerful trade union which is favourably placed may be able to enforce its will; and it may inflict considerable injury on the community, by imposing limits on influxes into the trade, compelling employers to reserve certain work for its members, and laying down rules as to the quantity of machinery allowed per head and the number of assistants permitted, in so far as the substitution of economical for uneconomical methods of production is hampered. At the same time, it is evident that trade unions cannot be blamed for resisting reactions of demand or supply on their wages which are consequent upon the prevalence of unreasonably low wages among certain sections of the labour world. The problem presented by trade-union action with reference to the level of wages is extremely complicated, and, when reflecting upon it, we must bear in mind similar problems, for instance, those relating to doctors and solicitors whose rates of remuneration are settled by regulations. No doubt the services supplied by doctors and solicitors are of a distinctive character, but the differences between various kinds of work are largely matters of degree.

Piece-rates, time-rates, premium systems, sliding scales, and profit-sharing.—The defect of the *time-rate* is that the workman is not induced to do his best, and of the simple *piece-rate* that he is induced to rush, perhaps to the detriment of his health, and perhaps to the deterioration of his work. Premium systems have been tried to cure the defects of piece-rates without sacrificing their advantages. The idea of the *premium system*, of which there are many varieties, is that a standard output should be assented to, and that for any additional outputs lower piece-rates, perhaps progres-

sively lower piece-rates, should be paid. When the rates for extra outputs progressively diminish as extra outputs increase, the incentive to increase them is diminished. There is, therefore, less chance of any scamping of work or over-working. Of course, if in other ways the operative is pressed to strain every nerve to turn out all that he can, more or less regardless of quality, the premium system simply insures that the rapid worker shall not be paid all that he is justly entitled to receive.

Which system of wages is best, depends both upon the man and his work. There are occupations for which satisfactory piece-rates cannot be designed, as the work is not reducible to a limited number of uniform units ; and there are industries in which machinery is responsible for the bulk of the process of production, so that the quantity of the output cannot be controlled by the workman in any appreciable degree. Again, in some industries the quality of the output is a matter of fundamental importance ; in others it is not ; and in yet others the workman cannot control the quality.

The system of assigning a task to a group of men and paying so much for the whole job may be called " the system of *group piece-rates* ". In many undertakings it has met with marked success. An important condition of its success is that each group should be limited in size, so that the individual incentive may be strong and a penetrating influence may be exerted by each person on the group.

Sliding-scales are attempts to arrange for the variation of wages with the profitableness of an industry, but they have many blemishes both in theory and practice. It is not always feasible to get an index of the profitableness of an industry. The prices of the product serve in an industry like coal-mining, but they do not in industries in which many factors, subject to variations in price, contribute to the product. In the latter industries, it is necessary to calculate

indices of the differences between the prices of the product and the costs of material and other elements which enter into it; and when in addition the product is of several kinds, the difficulty of getting a satisfactory index may be well-nigh insuperable. Moreover there are other flaws in the system. It provides for a slide of wages with the prosperity of the period just before the wages settlement, whereas, naturally, wages are determined by anticipated prosperity; and conditions affecting the supply of labour are left out of account. Hence inappropriate wages might result for a time, which would check the responsiveness of production to demand. Further, it has to be settled whether a moderately steady wage or a fluctuating wage is most desirable in any given case. Which is best, depends largely on the state of social development; and the question of the economical expenditure of income (see pp. 26-7), and the question of the reaction of each kind of wages on trade oscillations (see p. 353), enter into the problem.

The sliding-scale system used to be extremely popular in England, but to-day it is seldom resorted to. It is hardly discredited, and it might at any time be brought again into prominence. It has certainly played a valuable part in the evolution of the settlement of wages. With all their theoretical and practical imperfections, sliding-scales have worked and made for peace. The strength of their advocates has been their emphasis of reasonableness and regard for the interests of all parties; while, by necessitating the existence of joint committees, sliding scales have brought representatives of employers and employees periodically together, and assisted them to understand one another. If too much is not expected of the sliding-scale, its defects are recognized and it is readily revised as need arises, there is no reason why in certain circumstances it should not prove a happy device. Its use for a time—even its use under inauspicious circum-

stances—may firmly establish a joint committee which will learn to manage satisfactorily without the sliding scale the matters previously settled in large part by means of it.

Sliding-scales might be described broadly as profit-sharing, because they arrange for a slide of wages with the profitability of an industry, but the term "*profit-sharing*" is commonly reserved for the sharing of the wage-earners in the profits of particular firms. Profit-sharing proper tends to win for a business the devotion of its employees to its interests. Hence, it is especially suitable for businesses in which such devotion has a high value—where carefulness on the part of the employees saves waste, or consolidates and adds to the firm's connexion. It is naturally denounced by organized labour when it undermines the worker's independence, or is so arranged as to enable an incompetent firm to survive at the expense of wages. Reference should be made to what is said of labour co-partnership on pages 141-2.

Methods of industrial peace.—It has become increasingly the custom for trades to have *joint wages boards*, representative of employers and employees (and perhaps with an impartial chairman), which meet periodically, or when need arises, for the purpose of discussing proposals for altering wages or the conditions of labour. These boards educate both employers and employees, so that failures to agree become less common. Members of the boards learn to keep their tempers and concentrate their attention dispassionately on the points at issue. Where there is a joint board it is understood that there shall be no strike or lock-out before the matter in dispute has been laid before the board.

But all trades have not got joint boards; and few joint boards are constituted under an agreement which provides for a compulsory resort to arbitration. And disagreements about wages and the conditions of labour rapidly generate heat, which frequently causes strikes or lock-outs before

negotiation has had time to reach a settlement. Hence *general conciliation boards* and *mediation* by persons of influence have been tried with success. The good mediator does his work by inducing the interested parties to debate points again in a spirit of patience, and keeping them negotiating until they hit upon a working agreement. He may offer fruitful suggestions, propose compromises, and plead his views without seeming to push himself into the position of an arbitrator. Within recent years, every leading country has taken steps by legislation or otherwise to promote methods of industrial peace.

Turning to *arbitration* proper, we must draw a dividing line between the interpretation of existing contracts and the arrangement of new labour contracts. In the case of the former no fundamental objections can be raised against a general resort to arbitration. If the contract is held to have implied what one party never really intended, at the proper time the contract can be set aside. In Germany and France there have existed for many years industrial courts for the settlement of most disputes of this kind, and other disagreements of a trivial character. Arbitration, when new contracts are being proposed, is more awkward. The questions in dispute are indeterminate from the legal point of view. Yet it is frequently better, if conciliation fails, to refer the matter for decision to some person with wide experience, sound common-sense, and an impartial mind, rather than to incur the loss and suffering which a strike or lock-out would inevitably entail.

The prohibition of strikes and lock-outs and compulsory resort to the decision of a majority of a wages board, or to the pronouncement of a judge or arbitrator, is being tried in New Zealand and Australia. It remains to be seen how it will work in the long run. One difficulty is naturally the enforcement of awards if they are resisted. Another, which would be

more serious in a large industrial country such as England, is that wages might be thrown for long periods out of relation with the several demands for different kinds of labour, so that the responsiveness of the productive system to changes in consumers' demands would be diminished, and enterprise and the investing of capital would be discouraged. In fundamental industries, upon the steady activity of which the whole community is dependent—for instance transportation,—there is most to be said for the system of compulsory arbitration.

Drastic action is another matter where the conditions of labour are wretched, and where the forces which ordinarily ensure that the conditions of labour shall be at least tolerable are operating only very feebly. *Anti-sweating wages boards* with unusual powers may effect more, directly and indirectly, than some critics have foretold.

CHAPTER XXIX.

UNEMPLOYMENT.

Causes of unemployment.—Our argument hitherto has gone to show that it is the impulse of human wants which is directly and indirectly responsible for the employment of labour. And since human wants as a whole may be regarded as insatiable, there is no end to the demand for labour. How comes it, then, according to this theory, that anybody is ever unemployed against his will? The answer is complex, as we shall see.

First, the obvious remark must be made that the question of wages is not infrequently involved in one way or another. Thus, among the possible causes of temporary unemployment in a trade, we must certainly reckon the successful insistence of the workpeople on a wage at which, as it eventually transpires, all in the trade cannot find work, even under normal conditions. The workpeople may over-estimate the demand for labour. Mistakes of this kind are inevitable from time to time, but when discovered they can be rectified. This having been noted, the remaining causes of unemployment, including under-employment, may be divided into the subjective and the objective. The chief of the *subjective causes* are physical, mental, or moral defects. These may be inborn or acquired, and curable or incurable. One of the conditions most unfailingly creative of the sort of character which makes for unemployment is the undirected drift of the rising generation into wage-earning. When the start in life is ruled

in the main by chance, many young people are drawn into occupations in which they neither undergo training nor learn discipline.

The chief *objective causes* of unemployment, or under-employment, are as follows : (1) trade cycles, (2) seasonal demand, (3) seasonal supply, (4) industrial changes which are neither cyclical nor seasonal, (5) the system of casual labour, (6) the social time-lag.

Trade cycles have already been described and explained. Periods of business depression recur after more or less regular intervals. When business is depressed, the demand for labour is reduced and many people are thrown out of employment while many others are only partially employed. The extent of the direct bearing of the trade cycle on employment depends in some degree upon the elasticity of wages. It frequently happens that more people can be kept in employment in times of bad trade by reducing wages ; and it should be noticed that the encouragement of an industry in this way, combined with its correlative, namely a rise in wages when business improves, should prevent both excessive depression and excessive over-trading. It must not be assumed, however, that the trade union which resists a fall in wages is necessarily acting against the interests of its members. It is not always easy to force wages back to an old position once it has been given up ; and it might be that steady wages would steady the policy of employers and so discourage trade oscillations indirectly, though it would seem that a ready response of wages to demand would be more likely to have this good effect.

Many trades are *seasonal*, but the slackness does not always come in the winter. Colliers are least in demand in the summer, and the printing trades meet with seasonal depressions just before and after the publishing seasons. As other examples of economic irregularity which is seasonal, we may take the periodic demands for labour for gathering in and

shifting harvests ; the climatic impediments in the way of the building trades in severe winters ; seasonal demands for muslins, furs, and other articles of clothing (partly determined by weather) ; and other demands which are socially seasonal. The causes of trade seasonality are *climatic* or *social*, and the climate may operate on the supply of things or on the demand for them. The seasonal limitation of the work to be done in certain industries, which is met with when meteorological conditions are a governing factor, is ultimately irremovable. When the cause is seasonal demand which is traceable to variations in weather, it is possible to meet it by continuous production. Seasonal demands for clothes only necessitate seasonal production because of the caprice and domination of fashion (which may become less), and the impossibility of completely anticipating fashion. If the cost of irregular work gets relatively higher, far-reaching anticipation of demand will become increasingly the rule ; and we have learnt that the cost of irregular work is rising.

Periodic distress among the wage-earners in the seasonal or vocational trades ought to be avoidable. The nature of these trades is known ; it should be necessary to pay a good wage to get men ; and to some extent other work can be arranged for slack times. It must be recognized, however, that, in consequence of the vagaries of weather, exceptional degrees of seasonal unemployment occasionally catch us unawares ; and also that much seasonable unemployment means at least a wastage of producing power.

Industrial rearrangements are constantly being made as a result of changes in methods of production on the one hand and in demand on the other hand. When a change takes place in the demand for things, it is reflected in the relative demands of different industries for labour. Ordinarily, when the relative numbers in an industry must be reduced, wages suffer a decline, the industry becomes less attractive, entries

fall off, and the industry dwindles automatically without the dismissal of many operatives. More often than not, great changes are brought about gradually on the side of supply, because plant does not wear out rapidly, and new ideas are not readily taken up and are not as a rule economical just at first; while, in demand, revolutions are practically unknown. Moreover, though an operative dismissed from one industry cannot turn to any calling, he is employable at once as a rule within a limited range of other occupations. It is occasionally overlooked that the contraction of some industries, which is not attributable to a diminishing population, must inevitably involve the growth of others; and that if the former must discharge adults, the latter must obtain additional adults who cannot be already specialized at the new work which they take up. In view of industrial changes, the importance of encouraging a high degree of adaptability in labour will be realized.

The *casual labour* system means engaging people for particular jobs which do not last long instead of providing them with regular work. The jobs are scrambled for and more people are drawn into the scramble than can be employed. Many persons who are prone to slackness like, or drift into, work of the casual kind; and as many who take to it succumb to slackness, irregularity in the provision of work is encouraged. At each place where the jobs are apportioned out, casual labour tends to congregate at least in sufficient numbers to meet the maximum demand of that place, which actually may be seldom reached. A large proportion of the problem of unemployment is the problem of casual labour.

When abstraction is made of cyclical and seasonal unemployment, of casual labour, inappropriate wages and unusual industrial readjustments, also of the unemployable and the lazy, there still remains a percentage of unemployment which is never wholly absent. The cause of this residual unemployment is the *social time-lag*, which operates also in keep-

ing high the percentage of unemployment ascribable to trade cycles and other causes already analysed. The social time-lag is measured by the period which intervenes on an average before a workman who has left one post gets appointed to another. Ordinarily this period is more than appreciable. The new opening has to be found, or made, and some employers may be tardy in taking steps to meet an increased demand. The period of the time-lag is lengthy when bad trade prevails. It varies, too, with the character of the labour and with the economic features of the country. It is obviously reducible, but it is not wholly removable. If it were zero, the percentage of unemployment of the employable, in times of normal trade, would be much nearer zero than it is. Owing to the existence of the social time-lag, a shortage and surplus of labour may be experienced at the same time, the former by employers and the latter by employees; which is due to the fact that demand and supply are not brought rapidly into contact.

Remedies.—We shall now discuss some suggested means of reducing unemployment. There seems to be a possibility of curtailing the social time-lag through the agency of *labour or employment exchanges*. As it has already been remarked above, we often find at the same time unoccupied labour and an unsatisfied demand for just the kind of unoccupied labour. Yet the two do not readily get into touch. A man who loses his work, if he is not a trade unionist, must, in the absence of labour exchanges, enter upon an undirected search for a place; and not infrequently he has to spend a long and weary time in finding one, and suffer a heavy tax in anxiety. The trade unionist is not so badly off, since the trade union is a self-contained trade registry office for its members. But, when and where there are no employment exchanges, the amazing thing is not the time that it normally takes a non-unionist to find a new post—which I imagine to be fairly long

—but the fact that he ever does find the post which exactly suits him. His position might be likened to that of a person in a concert hall who has a numbered ticket for a seat which he is trying to find, in the midst of a crowd similarly engaged, when the seats are not arranged in any order. And when a trade unionist needs to change his trade, without the help of employment exchanges, he is in as awkward a plight. Moreover, organizations of this kind, in addition to shortening the time taken in finding work, may provide valuable information to enable people to better themselves. Demonstrably, the economic gain that would result from reducing the social time-lag, and making effective the latent trade and geographical mobility of labour, should repay liberal expenditure upon employment exchanges. We shall notice later the argument for State action in relation to them.

The system of the labour or employment exchange can also be applied to children on their leaving school, and its application to them directly, or through their parents or guardians, is at least as important as its application to adults. But for juveniles a less mechanical organization is wanted, in view of their need of advice, not merely about openings, but also with reference to their continued and appropriate education after they have left school, where continuation training is not compulsory. How much economic waste, I wonder, is attributable to the misplacement of people in the social system, or their lack of proper preparation for their positions, and to what extent could it be avoided, were information and expert direction readily available at the critical time in people's lives !

Furthermore, the exchange system can be used to minimize the evils of casual labour. The prime need is that the casual labourer should get more regular work. Special exchanges have been set up at some docks, so that labour can be directed at once to the places where it is most in demand. Also

systems of insuring priority of employment to regular dockers have been tried. The regular dockers are thus provided with more continuous work, and the casual labourer is discouraged.

As regards the treatment of the unemployment caused by trade fluctuations, particularly those which make up trade cycles, there are two outstanding proposals. *The one is to encourage the system of spreading the reduced demand for labour over all in the affected trades ; the other is to make the public demand for labour compensatory, as far as is practicable.* The spreading of temporary unemployment by the running of an industry short time, or by working with short-time shifts of labour, appears to be commendable from the point of view of the workpeople. It would seem better that all the operatives in an industry should do less and earn less than that some should earn nothing at all, if aggregate wages in the industry were no less, or barely less, in the former case. It is possible that such spreading of unemployment will become more common. The further adoption of the second scheme may also be expected, as much of the demand of public authorities for labour can be made to vary inversely as the trade cycle without great trouble or loss. Whether, in addition, it is desirable that work which would not otherwise be undertaken should be started by public authorities, is a question about which there is much difference of opinion. If such work is provided, when it is selected its usefulness should be taken into account, so that the waste involved may be as small as possible ; and the work should be properly organized and carefully supervised. But here we are encroaching upon a matter of public economics.

Among the proposed remedies of unemployment, we must notice those which bear on the subjective side of the problem. Home labour colonies, widely interpreted, are of use in the solution of the problem of unemployment, if properly specialized to different purposes, (*a*) for the reformation, as far as

possible, of drunkards, vagrants and other social parasites, and (b) for the restoration of those who have become unemployable through physical unfitness, but are curable. These colonies need not be wholly, or even mainly, agricultural in character. Apart from such institutions, and in connexion with them also, training establishments for those who need training, either to become efficient in their trades, or for the purpose of changing their trades, if change is needful, cannot fail to be of service.

Means of mitigating the distress caused by unemployment.—The provision of some useful work by public authorities when trade is bad is in part a means of reducing unemployment and in part a means of mitigating the distress caused by it. Saving is another, and the most obvious, means of mitigating the distress caused by it. Unemployment is not so grave a mishap to those who have saved. To those who have not saved it means privation, the breaking of old habits, perhaps reduced efficiency, and possibly a permanent fall in the social scale. Saving, with a view to the chances of unemployment, through the agency of associations if possible, is, therefore, to be encouraged.

But we must not suppose that it is a simple matter to organize insurance against unemployment, except through such institutions as trade unions. Risks of unemployment do not happen to be evenly spread over all trades, or all persons in the same trade. And it is awkward to determine in each case the point at which slackness in seeking work becomes negligence which should be penalized. Moreover, disagreements can easily arise over the wage at which work must be accepted or unemployment benefits be sacrificed, and over the nature of the work which must be accepted by those drawing benefits. Obviously, a fair and effective insurance scheme is bound to be complicated and must be administered with acute discrimination. Trade unions are

peculiarly well equipped to undertake insurance against unemployment, because they fix a wage at which work is allowed ; because they wield a certain authority over their members and find them places which they are expected to show reasonable ability to keep ; and because they are organized by trades. When any public authority subsidizes insurance against unemployment, the objection, which is apt to be felt by the more employable workmen, that they are paying in their premiums for their own risks of unemployment, and in addition for a part of those of the less employable workmen, can be mitigated or removed.

BOOK VII.

PUBLIC ECONOMICS AND PUBLIC FINANCE.

CHAPTER XXX.

THE STATE IN RELATION TO BUSINESS.

Classification of State action which is economic.—Public economics, apart from public finance, is concerned with the function of the State in relation to economic activities. It is not a part of *economic science*, though it draws largely upon it. It is the section of normative economics which overlaps normative politics, combined with so much of the art of political economy as falls within the bounds of politics. On pages 2-8 explanations are given of the distinctions just laid down. Inasmuch as modern communities are broken up into many political parties, the subject of public economics is highly controversial, particularly on the fringe. Where it is, my aim will not be to recommend the designs, or defend the achievements, of any particular school, but to bring out the points at issue.

We may begin by classifying the State activities now to be discussed into (1) *those which have more or less reference to business (producing and exchanging), though they may have an important social bearing*; and (2) *those of which the primary justification is widely social, though they may have an important economic bearing*. The division is not strictly

logical, but it will serve a useful purpose. In this chapter the former will claim our attention.

The State may function with reference to economic activities (a) by controlling them; (b) by encouraging them; (c) by undertaking them itself. Control may be called for when private enterprise is not lacking in vigour, but is apt to do damage incidentally. Encouragement may be needed when private enterprise falls short of furnishing what the community wants. Finally, there is *prima facie* a case for the undertaking of certain enterprises by the State when control or encouragement is needed, but is costly or fails, and when the State happens to be an effective producing instrument. There are also certain other reasons for State initiative. By the State is meant here the central government or local governments.

The need for supplementing private enterprise.—We may now proceed in a very general way to particularize the more obvious faults of omission and commission, on the business side, of a system wholly competitive.

(a) There are certain businesses which are bound, or almost bound, to get organized as monopolies. When so organized, we have called them "*social monopolies*" (p. 143). In the provision of gas, water, and urban transportation we have examples. In these and like matters, the choice of the community lies between conferring a monopoly upon a company and public management. And in other allied cases, though monopoly is not so inevitable, centralized management of the service may be the most economical. If private monopolies are suffered, there remains the baffling task of so controlling them that the work will be done well and not charged for exorbitantly. Nevertheless, it is not hard to imagine circumstances in which the best results are achieved by delegation of some of these functions to a company. Much depends on the efficiency of the governmental agencies. Of the social

monopolies, or semi-social monopolies, generally, or largely, assumed by central governments, postal services may be singled out for special mention. Railway transportation may be placed apart, as the question of the State in relation to it is still contentious. But where the State does not manage the railways it regulates them on the ground that they are semi-monopolies, and that they provide what are necessities to an advanced community. Into the railway problem military and social considerations may also enter as important elements and prove the determining factors. To railways we shall have to refer again.

(b) Certain productive functions have been subsidized or assumed by the State because of the suspicion, or conviction, that *the incentive of private gain fails to insure provision of what is wanted even when its provision would pay*. It may plausibly be maintained that individuals in their business transactions will not be swayed by the supposed effect of their actions upon the unborn successors of a generation yet unborn; but that when these same individuals deliberate together as representatives of their country they will naturally take the national point of view and think into the future. In order to meet these remote claims, it is argued, therefore, that the nation must act through its Government. Examples of State undertakings which have arisen from doubts of the adequacy of private forethought are to be found in afforestation and the checking of coast erosion. Other partial illustrations are furnished by certain railways which were originally started by Governments, or subsidized by them, in order to hasten economic development, and were defended on the ground of the effects which they would bring about after many years. The same lack of confidence in the attractive force which a distant future exerts upon the individual will also account to some extent, as we shall see later, for the protective foreign trade policies of certain countries.

Another group of cases is found where extensive organization, and much concerted action, is needed to achieve the desired end, and where private inducement is not strong enough to make it probable that the requisite measures will be taken. The undertaking may be very costly and troublesome, like the inter-linking of internal waterways, or its benefits may not be commonly realized and may be widely diffused, such as those conferred by experimental agricultural stations.

(c) We may suitably place next in our catalogue certain *purely economic services which in private hands would never yield a revenue, but which, nevertheless, it would pay a community to furnish itself with.* There are services from which a very large consumers' surplus (to put it technically) could be reaped if they were obtainable at reasonable prices, but services, the demands for which, and conditions of supply of which, are such that no possible charges could cover the cost of the outlay entailed in their provision. These services the State may secure for the public by producing them itself or subsidizing private endeavour. No doubt, portions of some railway systems, and many bridges, exemplify the case in point.

The mention of bridges may lead one to inquire why no charge is made for the use of most public bridges, and public roads which are in the same category. No charge is made because in any event it would be comparatively small and the public is put to great inconvenience by the collection of tolls, while the gratuitous use of roads and bridges does not result in wasteful reactions of an appreciable amount. The gratuitous offer of motor-cars on demand would be of quite another order. If motor-cars could be hired for nothing, and their supply was such that anybody could get one when he wanted it, we should have to be taxed very heavily to cover the cost, and be prevented from buying what we would rather have than unlimited rides in motor-cars. People

would use motor-cars furnished gratuitously more than they would feel justified in doing if they had to pay each time, and the cost of the extra provision would be high per person ; whereas little or no extra provision would have to be made in the case of roads and bridges, and any extra provision that had to be made would be inconsiderable per person.

Under this heading, we may notice the increase of consumers' surplus which can theoretically be brought about by encouraging, in some degree, industries subject to increasing returns to the discouragement of those subject to decreasing returns. The gain emerges from the circumstance that the larger output of the former industries reduces their costs of production and that the smaller output of the latter industries reduces their costs of production. We must not run away with the idea, however, that it is bound to be beneficial to tax the latter industries in order to pay bounties to the former. To do so might be to place a burden on the poor, in order to make living cheaper for the rich. Moreover, it must be noted that, whereas a small tax might be advantageous nationally, a somewhat larger one might be disadvantageous. It is highly questionable whether the State can ever produce benefit in this way to any substantial extent ; but it might be possible to find partial examples in certain unremunerative municipal undertakings.

The theoretical point raised in the above paragraph may be illustrated geometrically with the aid of diagrams, like those on page 421. In fig. 21, if S' is the original supply curve, the output can be raised to Oa by a bounty of dh which means an outlay of $dh \times Oa$. The gain in consumers' rent would be $edcf$. By taxing the thing to which fig. 20 relates, which is produced according to decreasing return, a sum $dh \times Ob$ could be obtained at a loss of consumers' rent of $efcd$, if S is the original supply curve in fig. 20. If figs. 20 and 21 are drawn to the same scale and $dh \times Ob$ (in fig. 20) equals $dh \times Oa$ (in fig. 21), it is at once apparent, subject to the qualifications stated above, that in this case taxing the thing

subject to decreasing returns, and paying the proceeds as a bounty on the production of the thing subject to increasing returns, would result in a gain of $e d e f$ (in fig. 21) less $e d e f$ (in fig. 20).

It is not essential that the bounty-fed industries should be subject to increasing returns and the taxed industries to decreasing returns, though in such a case the gain tends to reach its maximum. There may be a theoretical gain when both sets of industries are subject to increasing returns, provided that increasing returns are more strongly marked in the bounty-fed industries; and also when both sets of industries are subject to decreasing returns, provided that decreasing returns are more strongly marked in the taxed industries. More precisely, the right things to be guided by, if they were discoverable, would be the relations between demands and collective marginal costs (p. 167). Finally, it must be emphasized again that any apparent gain from the taxes and bounties contemplated might at once disappear, and perhaps be replaced by loss, when account was taken of the effects on the real incomes of different classes in the community. The benefit might fall in bulk to the rich and the burden rest in the main on the poor.

(*d*) There are cases in which a private gain is made at the expense of a heavy economic loss to society. A trust, or other voluntary combination, may exploit the public; and the perpetrators of certain acts on stock and produce exchanges in enriching themselves may cause widespread damage. In these cases, it is transparently the State's duty to consider whether it cannot protect the community by exercising some control.

(*e*) There are cases in which private initiative is not effectually induced by competition to produce satisfactory qualities of what is wanted, either because of the ignorance of consumers, or because of the difficulty which consumers experience in trying to determine the quality of what is supplied, or for other reasons. Hence, when the purity of the supply is a matter of importance, it is usual for the State to take special cognizance of it; but it may be able to attain its ends

merely by inspecting, and penalizing the practice of adulteration and the selling of inferior goods under false or misleading designations.

In this connexion we may notice the *currency*. Uniformity in a country's currency is essential, and the prosperity of a country is so directly dependent upon its possessing a sound system of currency, and good coins which will always be above suspicion, that none would venture to object to the Government's issuing all coins itself. The matter of the provision of media of exchange brings in its train a complex of momentous problems. As we know, credit media of exchange and the activities of banks have become an integral part of the machinery whereby exchanges are facilitated. Some States, therefore, have issued notes themselves as well as coin (partly for the sake of profit), and some States have undertaken the office of banking. Other States, however, have been content to regulate the note issue and otherwise control banks.

(f) There remain cases in which States have controlled, subsidized, or undertaken some form of production, broadly regarded, for reasons which are not in any substantial degree economic. The maintenance of armaments will at once occur to the reader.

State industries.—There are some to-day who would like to witness a vast extension of the State's purely economic exertions. They have been encouraged in this view, or it may be persuaded to it, by the triumphs of democracy of late years. The reflection, however, that a system which works well enough in politics might not work well as a rule in business should impose a check on hasty decisions. Perhaps the most important function in both politics and industry is performed in the selection of directing heads. In politics this selection must be conscious and deliberate. There is no alternative; and it may be that choice so exercised turns out

to be ordinarily appropriate in view of the services required of representatives in Parliament. But there are grounds for apprehending that the general substitution of some like system for the existing natural selection of leaders in the economic field might prove calamitous (see pp. 135-6). Moreover, we must not be forgetful of small economies, which in the aggregate may reach stupendous sums, and which are apt to melt away when private inducements are eliminated from a business. Again, there is the matter of driving force. Can we be sure that this is not weakened when State action is substituted for free enterprise? Thorough-going State management—especially when carried far into the lives of the people—might turn out a neat business economy and a well-behaved community; but it is not the docile who seek adventures at home and abroad, push on to new things and create lusty colonies. Further, in invoking the machinery of the State for economic objects, we must bear in mind that, owing to difficulties in selecting leaders and in other ways, the State might be less responsive than the competitive system to individual needs; and inappropriateness of production would have a depressing effect upon the community, and be apt to produce stagnation. It must be admitted that economic undertakings under public authorities have prospered, but we should do well to bear in mind that the inventions which created many of these undertakings arose under competition. If the assumption of a business by local or central governments should remove a field of invention from competitive influences, the State would act prudently in proceeding very tentatively. This difficulty, however, is less than would at first appear. If all electric trams were run by local authorities, competition would still rule in the electrical industry which provided them with their plant and accessories.

The considerations advanced above are not equally weighty with reference to all economic activities. In the case of some

they may be negligible. And, on the other hand, we must not overlook the elimination of waste which frequently accompanies the unification and systematization of some industry when the State undertakes it. We must ask, with reference to each proposal, whether the gains are greater or less than the losses which may be incurred. Nobody can affirm dogmatically of the present, and still less of the future, where exactly the advantageous limits of the extension of the State activities of any community lie. The distribution of productive functions between the central government and local governments scarcely calls for remark here. It must obviously depend upon the efficiency of each and the localization of the service in question.

State control.—Whether the State should assume responsibility for running any particular business or not, must depend upon the other courses open to it and the prospects of their success. Of these, State control is one; and the difficulties of State control are frequently great. Imagine a country nervously anxious about its banking reserves and attempting to frame rules for their prudent management. It would most likely find—as States which have dealt with this matter have found again and again—that the rule which yielded an advantage of one kind stood in the way of advantages of another kind. If it wanted to sacrifice nothing, it might soon have such an unworkably complex system of fundamental regulations, and regulations providing for exceptions, that it might reasonably decide to take over the work itself.

The difficulties of State control have been felt in particular in relation to monopolies. Whether their formation can be stopped or not, when they are voluntary, remains to be seen, and also, it may be added, whether it is desirable always that their formation should be stopped. Moreover, some monopolies, which we have called “social monopolies,” are in-

avoidable. Given the monopoly, how can the community be protected against exorbitant charges, and a minimum of efficiency in the conduct of the business be enforced? Confiscation of profits above a certain maximum prevents profits above that maximum from being earned, which may be of no benefit to consumers, since careless management, instead of low prices, may explain why net earnings are no greater than they are. One ingenious device is to link prices to profits and insist that as profits rise prices shall fall according to some fixed rule. But even this device labours under the defect of permitting excessive profits or diminishing the inducements to economy and a progressive policy. Rules, too, have a way of becoming obsolete. The only control which is thoroughly scientific is that which is the outcome of continuous experience of the business to be controlled; but, unfortunately, it involves duplication of management, which is wasteful, and, by dividing responsibility, runs the risk of leaving nobody responsible. The difficulties which are frequently found to lie in the way of the inspection involved when State regulations are imposed, are too obvious to need dwelling upon.

Nevertheless, we should be mistaken in concluding that effective State control is impossible. Where it has limited objects in view, it may achieve what is wanted with a minimum of disadvantage. But we must realize that, as State management has its defects, so has the alternative of State control.

Bounties or subsidies.—At the one extreme the State is frequently called upon to bridle private initiative. But, as we have observed, at the other extreme private initiative fails to respond, or to respond adequately, to the wants of the community. The need at the latter extreme is State encouragement, if the State decides to enlist the forces of private initiative instead of undertaking the work itself. The State may encourage businesses directly or indirectly. It encourages them directly when it subsidizes them, and in-

directly when it protects them against competition, and so ensures them a market. But, in some cases, protection against competition is futile, either because there is no competition, or because the protected business is still left unremunerative. With protection we shall deal in the next section; our present subject is to be bounties or subsidies.

The bounty has assumed many forms. A *guaranteed minimum of profit* is one form. This has been criticized as economically unsound, because no inducement is left to the enterprise to make as much as it can. But, in certain circumstances, it may be advisable. Capital may be most easily obtained when interest is guaranteed; much capital may be wanted; and the enterprise may be one from which great public utility will be derived. Again, it may be desirable, for social or political reasons, to attract the capital of small investors and so secure their interest or goodwill. Guaranteed profits may be the most enticing offer that can be made to such people. This is one ground upon which the guaranteeing of the dividends of railways in France has been defended. We may, however, conclude that a subsidy which varies directly in some way with the quantity and quality of the work done is best as a rule.

Bounties on export, if the industry to be encouraged can export, have the recommendation of being cheaper than bounties on output. But they have the obvious disadvantage of persuading producers to attend more to their foreign markets than to their home markets.

The worst of all State encouragement of business, both direct and indirect, when the State encouragement must be continued for an indefinite time, is that vested interests are created by it. But, sometimes, temporary assistance is all that is needed. An industrial system driven by the spring of self-interest, so-called, is in parts like a cheap watch. The spring of the cheap watch may be strong enough to keep the

works going, but, after winding, the watch may want shaking to make it start. So temporary stimuli may be requisite to get parts of the industrial system to work. Ordinarily, there is no difficulty in administering the fillip which is wanted. For suitable purposes, the State can furnish loans at a low rate of interest, or even make a contribution to capital expenditure without asking for repayment.

Protection, fair trade, retaliation, and reciprocity.—We have examples of protection in *patents* of inventions and *copyright*. This protection which lasts only for a limited period, pays the community on the whole, because in its absence the monetary proceeds of inventing or writing would be paltry, and the best way of insuring that people shall produce what is wanted most is to allow them to get an adequate share of the value of what they produce. The same kind of protection has been tried outside the fields of invention and authorship. *Trading or industrial privileges* have been conferred on certain persons with the object of promoting particular businesses, or for other reasons. But protection of this type usually leaves the State with an awkward problem of control to solve.

The most famous, and the most hotly debated, form of protection is that which encourages home industries by placing *restraints on foreign trade*. The question is an immense one. We must, therefore, content ourselves with a hasty glance at some only of its most conspicuous features.

The arguments urged in favour of protective import duties relate to political as well as purely economic ends. Some of their advocates think almost exclusively of political ends. Nationalism, on a broad foundation, and security are what they hope to attain. An examination of this notion would carry us too far afield, and raise issues remote from the confined objects of the present treatise. Suffice it to say that a careful investigation of the plea for protecting infant in-

dustries and declining industries reveals arguments for and against. There are cases in which infant industries would flourish without protection, and cases in which they would not; but protection of industries should ordinarily hasten their development. And it would not be desirable for a country that international division of labour should be carried to such an extreme that the country would be restricted to the narrow economic life of providing little else than food and raw materials on the one hand, or certain manufactures on the other hand, for itself and the rest of the world. But, obviously, it must not be assumed that, in the absence of protection, international division of labour would be carried to this extreme—and it must not be taken for granted either that a nation which leaves things to chance is in no danger of finding itself insecurely dependent upon other countries for certain articles vital to its interests. Of course, immediate economic loss almost inevitably results from imposing import duties (see pp. 422-5), but there may be an ultimate gain.

It must be recognized, however, that when a country extensively encourages the home production of things which can be imported, it runs the risk of getting unsuitable and unnecessary industries established, or getting certain industries established on an unsuitable scale. Moreover, it may learn to its cost that it is difficult to effect the removal of any protection, intended only for infant industries, from those which have reached a lusty maturity, and from those which remain weaklings and are parasitical on the community. Further, the contention that foreign competition has a bracing effect on economic life, with which few countries can afford to dispense in bulk, is not to be lightly dismissed. And, finally, the fear lest the public be sacrificed through the operation of sinister interests and the agency of corruption is not baseless, human nature being what it is.

Just as protection can be applied to a country, so it can be applied to the larger unit consisting of the country and its colonies, when it possesses colonies, and for this kind of protection political considerations may be the dominant ones. The idea is to introduce greater unity into the colonial empire by giving it an economic as well as a political foundation. It is argued that the bonds uniting the mother country and her colonies are tightened when *trade within the Colonial Empire is accorded privileges not enjoyed by other commerce touching any of its shores*. Opposition has run along two lines. Some persons admit a certain or probable gain, but contend that the loss involved in surrendering a substantial part of the economic advantages derived from trade with foreign countries far transcends it. Others refuse to recognize any chance of gain. They dwell upon the possibilities of quarrels within the Empire over business matters, and argue that the industrial development of the colonies would be retarded under the scheme, unless the preference were practically valueless to the mother country from an economic point of view.

Of late years, protection against a special kind of foreign competition has been demanded, namely, against *dumped* goods. Dumping has been fully explained on pages 185-8. Dumped goods necessarily disturb home industries. The case of those who object to anti-dumping tariffs takes more than one line. It is maintained that dumping is insignificant in comparison with trade of an ordinary kind, and that its effect is trivial—which raises a question of fact that is not so determinable as it would seem. It is argued also that the importing country gains the cheap dumped goods; but it should be noticed, as regards this plea, that they are not very cheap since they need not be sold for appreciably less than home products. It is contended further that the dumped goods cannot easily be distinguished from others of the same kind, and that duties on all goods, whether dumped or not, might

entail enormous loss, and would largely fail in their object, because, *ex hypothesi*, the dumped goods would still be sent even if they were to realize much less.

As to the best commercial policy, apart from questions of security and development, diverse views are held. At the one extreme are Free Traders who admit of no exceptions. At the other extreme are thorough-going Protectionists who believe in placing a barrier against all foreign competition. Midway are those who believe in what they call "*fair trade*". They grant that universal free trade would be best for all, at any rate after industrial development had reached a certain level, but they argue that a free-trade country in the midst of Protectionist rivals must lose. Their position is by no means unassailable, but into the technical *minutiæ* of the points debated we cannot now enter. Some persons hold that a flank attack on protection with the weapon of protection, that is *retaliation*, is calculated to improve a country's trading prospects. It might and it might not: open tariff wars seem generally to have damaged every country concerned; but the fear of retaliation may, of course, keep restrictions on commerce within bounds.

Reciprocity is different from retaliation in that it proceeds by mutual concessions. But in the tariff bargaining which has been conducted of late, reciprocity has been hardly distinguishable in essentials from methods more overtly bellicose. The first drafts of tariff measures may be intended to threaten. In so far as they are, retaliation usurps the place of reciprocity. Each nation in effect declares in this event what damage it is prepared to inflict if its wishes are not met.

In tariff laws the interests of free-trade nations are safeguarded by the *most-favoured-nation clause*. This clause, as commonly interpreted hitherto, declares that no country's goods shall be treated more favourably than those of the free-trade country. It has been argued that a free-trade country might

in effect be discriminated against, nevertheless, if tariffs were made so detailed that the peculiar qualities of goods which it and it alone exported in bulk were taxed at a rate exceptionally high, in comparison with the duties on other qualities which competed with the former to some extent, but in which the free-trade country did not specialize. Were the *most-favoured-nation clause* commonly interpreted so as to exclude free-trade nations from sharing in the concessions secured by tariff bargaining, its value, in view of the modern practice of tariff-making, would be but meagre.

Laws to facilitate business.—The question of the general law relating to business belongs rather to the legal branch of social science than to public economics, but a few words may be said of it. Without protection against dishonesty no community could advance far in economic development. Wise laws relating to the limitation of the liability of partners and shareholders, whereby enterprise is encouraged; to bankruptcy, whereby, while the fraudulent are punished and the reckless are kept from inflicting further damage, the unfortunate are replaced in a position in which their efforts are not handicapped; to company promotion and the publication of certified balance sheets in certain cases; to associations such as trade unions and professional societies—to mention a few instances—such laws promote to an incalculable extent the evolution and efficient functioning of society on its business side.

Emergency measures.—All the above relates to normal conditions. In emergencies, such as those occasioned by war, State functions have to be widely extended. In the first place questions of credit and currency are bound to arise. These have already been discussed (pp. 263-4). And, after these, come numerous questions of the first order of importance when a country is engaged in a war that puts a great strain on its resources. The Government may have to make itself responsible for the supplies of some staple foods, and materials

of certain kinds, both those relating to the maintenance and equipment of the forces and those relating to the essential needs of the people. In critical times, it is not safe to leave the acquisition of these to the play of competitive forces. Provision made under private initiative might prove fatally inadequate, and in unsettled times an outbreak of speculation would be most harmful and is yet highly probable. Again, in so far as the supplies in question are produced at home, to prevent their dissipation, it may be desirable to prohibit export or permit it only under licence in limited quantities and to selected purchasers. Moreover, supplies having been acquired, there remains the problem of their distribution. In extreme cases the only solution of this may be rationing, whether of food, or coal, or petrol, or what not ; but a gradual release of supplies, the settlement of price being left to market forces, may be sufficient. During the war, rationing has had to be far more extensively resorted to in Germany than in England.

Nor is the function of Government, in the emergencies contemplated, confined to supplies of the sorts mentioned. Supplies of such manufactured things as munitions and equipment for the forces fall equally within its purview ; and adaptations and new constructions in the industrial world may be entailed, which, in the absence of Government action, might be stopped by lack of capital or undertaken too late, or carried out too slowly. Moreover, the Government has to see to it that private demands are duly subordinated to its demands. Hence, in England during the war, a system of co-operation between businesses and the Government was set up, and widely extended control was exercised by new and old Government departments under special Acts. Nor was the mobilization of invention forgotten. In connexion with this State initiation and direction in industry, labour questions on the one hand, and questions of profits on the other, were of course raised. Consequently, where control was applied, a

scheme for limiting profits was put in operation ; and, on the other hand, problems of wages and trade union rules were settled either by agreement or State dictation. During the war the Government was fortified in its unaccustomed interferences by the patriotic sentiments of the public, including both employers and workmen. Everything had to be risked or sacrificed, for the time being, rather than a stoppage of production or diversion of attention from the urgent needs of the country.

The Government was also involved in manufacturing enterprises by the necessity of making both munitions and other things for which the country had been in the past largely dependent upon sources of supply that were cut off. Further, means of transport were so essential in the prosecution of the war that the railways at once fell under Government control, and, to a substantial extent, shipping and docks. Foreign trade, too, had to be regulated, apart, even, from the prevention of the leakage of essential supplies. The shipping available for ordinary commerce was limited after the Government had taken over the tonnage it needed, particularly in view of the ravages of war and the locking up of enemy vessels in neutral ports. Hence, some imports were prohibited with the object of preserving more important ones, keeping down freights, securing economy at home for financial reasons, and reducing the debt owing abroad, which was swollen by heavy war purchases while means of payment in exports were being reduced (p. 264). It was with reference to the necessity of keeping up foreign payments, that industries producing largely for export were allowed to retain a limited amount of labour that would otherwise have joined the forces. But this protection of exporting industries was only part of a larger scheme, under which the release of men for the forces was regulated with reference to the relative importance of different industries during the war, and the possibility of replacing them with

males over or under military age or with females. In connexion with this, and the shortage of skilled labour for certain purposes, the Government took the active steps mentioned above to secure the "dilution" of skilled with unskilled labour, wherever needful and possible, and the substitution of women for men of military age.

These are but examples of the way in which the State is drawn by the pressure of necessity during war into paths where its presence would ordinarily be regarded as a trespass. Nor do its abnormal functions necessarily cease with the cessation of war when it has been of such a magnitude as to stop a large part of the world's commerce, and transform, and perhaps largely destroy, for the time being, the economic systems of the belligerents. The State must be involved in the task of recovery and reconstruction; and, in the matter of foreign trade, regulation of some kind may be found advisable for the transition period. As to normal relationships in the matter of foreign intercourse, the leading principles bearing upon them, so far as they are economic, have already been briefly discussed in an earlier part of this chapter; but we should do well to bear in mind that the relations between States contain political elements, broadly regarded, and that after recent events the predominance of these in Europe is to be expected for years to come.

CHAPTER XXXI.

THE STATE IN RELATION TO SOCIAL CONDITIONS.

IN this chapter we shall consider State activities which are of economic importance but have in the main a social reference, if a somewhat vague expression be permitted.

Factory acts and public health acts.—Regulations of the type of the factory acts are not identical in their bearing on adult males, women, young persons, and children ; nor is their justification the same with reference to all these classes of workpeople.

(a) Take first the case of adult males. Broadly speaking, the ground for State interference is that the knowledge of individuals, or their self-interest or philanthropy, cannot be relied upon to bring about such conditions as an enlightened community feels compelled to insist upon as a minimum. The workpeople in combination may not be strong enough to enforce their will, and all workpeople are not combined. The most high-minded employers are limited in their freedom by the competition of less high-minded rivals. And, finally, the knowledge and ideals of the bulk of the interested parties, even of those who are anxious to secure the best conditions of labour, may not be such as to insure that they will choose aright.

In the dangerous trades the strongest case for regulation can be made out. In some of these trades, certain acts may be a source of physical harm, not only to the person who is responsible for them, but also to his companions—for instance

striking lights in coal-mines. There can be no doubt that people should be protected against the possibility of an individual's acting out of foolhardiness, or ignorance, in a manner menacing to their lives or health. In other trades, the commission or omission of certain acts is likely to prove hurtful only to the parties who perform them, or neglect to perform them. Why should the State enforce what is prudent as regards acts of this kind? The State does not punish an inexperienced climber for attempting a dangerous ascent which is beyond his powers. The answer can only be hinted at. It rests upon the distinction between the day's work and recreation, and involves the question of how far the individual can be suffered to regard his health and his life as just his own property. Moreover, the danger which has to be guarded against is frequently hidden from the less intelligent and least instructed, and even when it is explained to them they may not realize its seriousness. Convincing reasons can be advanced for protecting people against themselves; and they are extensively protected against themselves in many countries.

The rules which we have chiefly had in view so far are those binding upon workpeople. But in the dangerous trades, technically understood, and in other trades where work of some sorts may involve danger, safety cannot be even approximately secured unless precautionary measures are taken by the employer. Where this is so, and the danger is substantial and not remote, they are commonly insisted upon. When left free, the employer may be constrained by competition to let his workpeople take their chance, or he may not be fully alive to the risks.

We may observe at once that all injunctions relating to *public health*, whether they bear on workpeople at their work, or occupiers of houses, or landlords, employers, or doctors, are covered by portions of the above discussion.

that wages ought to be determined authoritatively by legally constituted Boards or Courts, as they are in New Zealand and Australia. The objections that have been urged against compulsory arbitration and similar plans have been noticed on pages 350-1. When the State is the proposed arbiter, it has been maintained, in addition, that political dangers might arise, and social reactions of an undesirable kind. Self-government, self-direction of one's life, self-settlement of one's wages, are said to be beneficial, not necessarily because they are likely to produce the best immediate results, but because they develop self-reliance, watchfulness, and foresight, and strengthen the springs of action in individual wills, which are the ultimate guarantees of social vigour. But, to conditions which are abnormal, for instance to "*sweating*," these reflections cannot be said to apply.

There is a difference, which by many is held to be of great significance sociologically, between doing something for a person and removing obstacles which prevent his doing it. In the one case, there is complete transference of responsibility. In the other, the final responsibility is left with the individual, but impediments which confine his real liberty of action are removed. Impediments serve their purpose, but, when every conceivable reform has been carried out, quite a sufficiency of impediments for our proper discipline will still remain, in all probability. We have seen (p. 356) that innumerable obstructions have to be painfully surmounted by many persons when they are seeking work; and forcible arguments have been adduced in support of the view that nothing short of a national system of recording the demand for and the supply of labour, and of disseminating information about them, will fully meet modern industrial requirements. Action has already been taken by Government in England and elsewhere, but it is too soon yet to speak with assurance of its ultimate outcome.

The *provision of work by the State*—apart from the provision of work entailed when the State has made itself responsible for the conduct of certain industries—raises fresh issues. What the State should do, if it should do anything, must obviously depend upon the degree of success achieved by the competitive system in keeping a community fully active productively. In inquiring in Chapter XXIV what this degree of success has been, we were confronted with the phenomenon of the trade cycle. There is no doubt that, in the recurrent periods of bad trade, such dislocation of the connexions between demand and production is suffered, and such paralysis of enterprise, that much employable labour is left in a state of enforced idleness. In view of this unassailable fact, and of the present state of thrift and the present level of wages, it has been contended that the State should not only encourage and subsidize insurance against the unemployment which is unavoidable from the point of view of labour, but also find some work for those most in need of it. In so many cases, work is even more necessary than wages, because demoralization is caused by long periods of idleness and hopeless searching for employment. It is maintained by some that, for very many years to come, it will be necessary for public authorities to start undertakings, in times of bad trade, which need not have been entered upon but for the existence of an army of unattached labour—that it will be necessary to do this, in addition to so arranging the direct or indirect demand of public authorities for labour that it shall be most intense when business is most depressed, and in addition to offering suitable training for any who may be deprived of their trade by industrial changes.

The State in relation to social insurance.—In some countries steps have been taken to secure maintenance for workpeople when their earnings cease or are diminished through accident or sickness, and to a less extent when need

arises through a temporary dearth of employment. The schemes are so various that it will not be easy to generalize.

The new policy as regards *accident* exacts contributions from the employer. So some portion at least of the expenses entailed by industrial accidents is compulsorily added to the money cost of production ; which seems not unreasonable when we remind ourselves that they form a part of the real cost of production. It is maintained that the gain will be, not only the preservation of many families from want when the wage-earner is badly hurt or killed, but also the eradication of avoidable dangers from productive processes. Businesses which seem to be unfortunate, as regards the number of accidents that take place in them, will probably learn how not to be unfortunate. With reference to *sickness*, the common principle of the latest reforms is to share its cost between the workpeople, employers, and the State. In some countries, the financial sources of old-age pensions are similar, but elsewhere, including England, they are paid entirely out of the proceeds of taxation. *Insurance against unemployment* has so far been handled only partially. The general principle is for the State or some local authority to subsidize trade union benefits, or raise a special fund out of public money, premiums from workpeople, and perhaps enforced contributions from employers. Membership of the fund may be optional or compulsory.

Some authorities have argued that in consequence of the State's having assumed a large share of responsibility in these matters, workpeople will tend to become less provident on their own behalf. It is apprehended that they will form the habit of supinely looking to the State at every crisis in their lives, and of assuming that no thrift beyond what is compulsory need be practised. However, there are authorities who, while assenting to the statement that such reactions may be looked for, express the opinion that they will probably be

negligible in comparison with the advantages directly conferred. And there are yet other authorities who think that desirable, instead of undesirable, social reactions are not unlikely. They consider that when people are bound to act as they would were they provident, the gain will be, not only the social insurance, but also the general acquisition of habits of providence in other matters. The suggestion is thrown out that when, in social affairs, certain courses of action are insisted upon, the choice and will that would naturally have led to them may thereby be induced. We may illustrate with an analogous piece of unsettled practical psychology: because we tend to smile when we are feeling amiable, we have been advised to cultivate smiling in order to become amiable. This social theory is of profound significance. If it should be widely substantiated by experience, it will wonderfully simplify the problem of social reform.

As we have already observed incidentally, the English *old-age pensions*, unlike the German ones, are not contributory. They have been justified on the ground that luck as well as law governs success in life, and that as, in a sense, all have helped to make the incomes of the well-to-do (since the community works as one productive whole) no serious infringement of property rights is involved in offering small pensions to the aged who have been the least fortunate. But this is not to be represented as the sole *raison d'être* for the type of pension which England has adopted. In fact, fundamental reasons have been only perfunctorily searched out, generally speaking. English un-introspective opportunism, which shies at abstract principles and compromises between practical proposals, is answerable for them to no slight extent. There has been, no doubt, a widely disseminated feeling of the justice of the contention set forth above, however vaguely it may have been conceived. But, at the same time, expectation of a reduction in Poor Law expenditure, to set against the expense,

has played its part, and also the hope that the pensions will stimulate providence by rendering the task of providing for old age less hopeless of fulfilment. Our pensions might have been of such a form as directly to encourage thrift by endowing it, or directly to encourage desert by endowing it. But schemes of this kind were assailed with criticisms, some weighty and some of a trivial nature; and it became apparent that these schemes suffered from the defect that they made at best a faint appeal to the mass of the population.

The State in relation to the provision of opportunities.—Opportunities are subjective or objective. Subjective opportunities are furnished by the discovery and training of our latent capacities. Objective opportunities consist in the means of exercising our powers. Now, a community may be regarded as constituted of an inchoate mass of capacity; and experience and theory teach with equal force that the bulk of this capacity will remain undeveloped if individuals are left to fight their own way unassisted, except for the aid lent by relatives or friends. Parents may be neglectful of their obligations or ignorant of the value of training. It is no longer disputed that the State should provide educational facilities; and further that it should apply the authority which it derives from the community to compel people to be educated to some extent at least. But all subjective opportunities are not intellectual. Some are physical, and of late certain public authorities have been drawn into schemes for assuring to more of the rising generation the physical power which is their rightful inheritance. So far as these schemes mean interference with family life, unwary procedure may be fatal, for the family is the microcosm of the community. In touching the family, we are intruding into vital social functioning of so subtle and intangible a character that its very existence is apt to be overlooked. But it is to the interest of the State that the most valuable actualities, mental and physical, should

be made of each generation's potentialities—that persons should be turned out into the world physically strong, imbued with the right social motives, and with their latent selves developed. In this matter, our position bears a traceable resemblance to that of the surgeon who is trying to repair defects in a human organism, and who is occasionally in danger—unless he has a marvellously intimate knowledge of the human organism and the imagination to foresee all possible consequences—of performing operations the direct benefit of which will be more than lost in indirect reactions. Despite, however, full recognition that in the normal home is hidden the essence of what makes the good or the bad in society, we need not share the views of those whose attitude is one of timid acquiescence in the ills that be.

Nobody knows with any degree of exactitude the extent to which in the modern world persons without wealth or influence are enabled to give expression to their powers. Whether there is need for public interest in this matter generally, and whether the State can improve objective opportunities, and should do so if it can, are difficult questions for the satisfactory answering of which much thought and much investigation would be requisite. We may notice, however, that experiments have been made in England with legislation aimed at the adequate provision of small holdings, partly with the object of making opportunities for the more capable and aspiring of the agricultural population. It was maintained that in view of custom, social and legal impediments, cost, and lack of initiative, small holdings would not necessarily be established even were they economical.

Public provision of the higher social goods and housing.—With the higher social goods, such as parks, libraries, and picture galleries, a community can only supply itself adequately when it acts as an organized whole. The demand for the beautiful city is becoming an important part of the

demand for the higher social goods, and it cannot well be met without some corporate action. Employers have created a few model villages, but garden city and suburb associations were needed to give expression to the aspirations of a section of the community and get more done, while town-planning has now advanced beyond the stage of discussion in England and received legal sanction. Connected with town-planning on the one side and public health on the other, is the question of housing. Without believing that the State should be universally, or to any appreciable extent, house-landlord for the community, many social thinkers welcome municipal enterprise in housing because it develops and tests a promising line of betterment policy, which can be followed by competition, and must be so followed if municipal enterprise creates a taste which shapes future demand.

Public aid.—The problem of public aid, or poor relief as it has been commonly called, is multiform, and the opinions about it are many. Three leading schools may be distinguished :—

1. There are those who think that the aid given should be in the main voluntary; that the State should do as little as possible. They believe in personal charity and distrust scientific methods. The thorough-going organization of public aid fosters dependence, in their opinion, and involves an attitude to the indigent which bruises their spirit and demoralizes the charitable. This school counts for little in England, and its sphere of influence elsewhere has contracted.

2. There are those who believe in the thorough-going organization of public aid, but think there is a danger of undermining the self-reliance of the population. They therefore propose that certain principles, which we shall examine, should be acted upon, and that the work of furnishing aid should be divided between the State and voluntary organizations.

3. There are those who, like the second school, believe in thorough-going organization, but do not believe in the gravity of the subtle reactions on character about which the second school is apprehensive. On the contrary, they contend that the adoption of certain of the principles recommended by the second school does more harm than good. They want to see the bulk, if not the whole, of public aid in the hands of the State.

Distress is due to many causes, subjective and objective. And all the subjective causes are not attributable to the faults of those reduced to distress. It is urgent, if the right sort and amount of help is to be given, that the causes of the distress should be known. It is also urgent that the capacity of the person in need should be known, if he or she can be restored to partial or complete independence. The special cases of children, the non-able-bodied, and the aged, we momentarily set aside.

The careful study and separate treatment of each particular case of need is known as *individualizing*. To carry it out completely an army of workers must be recruited. For this reason, and also to supplement and leaven the official attitude, voluntary workers are required, and, where needful, the voluntary workers may influence those in distress for their good. As this individualizing plan was started at Elberfeld, many decades ago, it is frequently called the Elberfeld system. Equally desirable with particularizing, is the adequate provision of institutions of various kinds for training and remedial treatment and for the retention of incurable beggars. Some of these institutions have come to be known as *labour colonies*.

To all this, both the second and third schools would subscribe generally, though in detail their views would not agree. And both schools believe in what may be called the *principle*

of less eligibility, which lays it down that those in distress should certainly not be maintained in a position of comfort superior to what is normal in the case of any of the self-supporting. But the second school think that many claimants for public aid suffer from weakness of character—particularly from improvidence and a lack of self-reliance. This failing, according to their reading of human nature, is fostered when aid is given, especially when the donor is the State; and if aid is easily obtainable, they think it may be encouraged in others. The spread of a feebleness of this sort throughout a large class would, they hold, be fatal to economic efficiency and progress. They, therefore, advise that in the first instance, in cases which are not hopeless, assistance should be tendered by voluntary organizations, and that it should be withheld until it is really indispensable. In their opinion, the person who has applied prematurely for help should be encouraged to make an effort to manage without it. If he takes public aid, it is thought that at the next crisis he will be even less able to do without it.

The third school, on the contrary, regard much indigence as analogous to physical disease. The longer a person with a physical disease puts off seeing a doctor, the harder is it to cure him. And the longer a person in distress puts off applying for public aid the harder his cure becomes, it is pleaded, when restorative treatment is needed. Restorative treatment means training, or physical or moral bracing. The second school would reply that the peculiarity of this social disease is that, in so many instances, self-cure is the only cure. The third school further insist that those who do not require remedial treatment are apt to become demoralized if their applications are not met promptly. Experience will finally settle this controversy. But certainly public money could not be spent to provide the kind of assistance which would be most helpful in certain exceptional cases—such assistance,

for instance, as expensive special training, or a loan to start a shop or some small business. For such cases, voluntary funds must be resorted to. The alternative might be for the person who had met with excessive misfortune to sink in the social scale, though he would have been efficient in the higher position.

With the aged, the non-able-bodied, and children, fewer difficulties arise, because there is no question of restoration to independence, though there is the matter of the example to others, and it is important not to discriminate to the disadvantage of the self-supporting and their children.

The doctrine of maximum satisfaction.—In concluding our cursory examination of the question of the State in relation both to business and social conditions, we must give attention to the doctrine sometimes known as the *doctrine of maximum satisfaction*, from which the famous maxim of *laissez faire* was a practical deduction.

. The doctrine of *maximum satisfaction* has been interpreted in more than one way. In one sense, it recognizes the faults in the competitive system, but declares that the State nevertheless does more harm than good when it takes upon itself responsibility for the performance of services beyond the maintenance of order, the penalizing of dishonesty, the relief of destitution, and so forth. Taken in this sense, the doctrine has been widely repudiated, but there is still general dispute as to where the line limiting the functions of government should be drawn. In a more moderate form, the doctrine of maximum satisfaction lays it down that the view just enunciated is correct ordinarily but that there exist numerous exceptions.

No reasonable person has ever accepted the doctrine in its extremest possible form and asserted that private enterprise, restricted only by laws for maintaining order and preventing dishonesty, brings about perfect results. Granting

that the competitive system tends to sift out the capable, enforce efficiency and economy, and render the productive system responsive to demand, it may still be insisted that its performances are marred by faults both of omission and commission, particularly when a broad social view is taken. This conclusion holds, though in a less degree, even if we suppose that all individuals are endowed with perfect prevision and that they never make mistakes about what they want and how to get it. We should do well, however, to remind ourselves that the correction can be applied to the competitive system in some respects by voluntary organization as well as by the State.

To the reactions of the competitive system on human nature, which are matters for the sociologist to study, we have given little thought here : but we may at least recall the statements made on pages 16-7, and bear in mind that its effects are mixed ; if it be true that in imperfect humanity competition has fostered self-seeking, a sordid spirit, and low ideals, it is as likely to be true that it has brought out some of the best qualities in human nature, industry and endurance, self-reliance, courage, and enterprise, through which the external world has been progressively subdued to the service of man.

CHAPTER XXXII.

PUBLIC FINANCE.

PUBLIC finance may be defined as that part of political economy which discusses the way in which Governments obtain their revenues and manage them. It includes the principles according to which contributions should be made by the members of a community to the expenses of their government. For a proper grasp of public finance a knowledge of the theories of the shifting and incidence of taxes is requisite. To these theories our next chapter will be devoted. It goes without saying that we can glance only cursorily now at the immense subject of public finance, and that whole sections of importance must be ignored.

Public revenues.—Governments get their revenues, exclusive of gifts, from (1) their property, (2) fines and penalties, (3) fees, (4) their business undertakings, and (5) taxes.

The revenue obtained from fines and penalties arises incidentally. Fines and penalties are not imposed primarily in order to produce revenue; and some portion of the revenue in the form of fees must also be regarded as arising incidentally. A fee we may define as a charge imposed on a person for a non-economic service. It is not necessarily equal to the cost of the service for reasons which will transpire; and one ground for demanding it may be to prevent people from giving unnecessary trouble. The charge for a specific economic service which can be refused, we may call a "price". A tax will be defined later.

The principles according to which the members of a community should contribute to the expenses incurred by Government, central or local, depend upon the nature of the work done by Government. The work done by Government may be classified for our present purpose as follows:—

1. Services, little or none of the benefit of which can be traced to particular individuals.

{	<p>(a) Ordinary political services.</p> <p>(b) Such economic services as the maintenance and lighting of highways.</p>
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2. Services, much of the benefit of which can be traced to particular individuals. These may be regarded as consisting mainly in economic services, such as the carriage of letters, and the provision of gas by local governments.

The division between political and economic services implied in this classification is shadowy, but it is not essential now to force upon it an artificial distinctness.

It seems evident that the cost of any benefits which are traceable to particular individuals should normally be claimed from the beneficiaries. Usually, in so far as these benefits are traceable to individuals, prices are charged if they are economic, or fees if they are not primarily economic. These prices and fees are not classed customarily as taxes. But there are cases in which people cannot reject a State benefit as they can refuse to buy any article (see the section on "betterment," pp. 405-6); and there are, moreover, exceptional services of class 2 for which it is not desirable to charge fees or prices. The latter are the services from the extensive private use of which the community gains largely, and of which the individual can, if he pleases, considerably contract his use. It may be desirable to raise the whole sum to cover the cost of such services by taxation; in order to avoid discouraging the individual from stinting himself in his use of them. The provision of household supplies of

water may be a case in point, as the cleanliness of the population is a public amenity. If people had to pay directly for every gallon of water they consumed, some of them would economize their use of water too much, and these would probably be the people who ought least to do so. Hence, for the bulk of the household consumption of water, it is common to make a fixed periodic charge varying with the rent of the house, and not to charge per quantity consumed.

For services of class 1, payments proportional to benefit conferred cannot be exacted from individuals. The expenses of these services, and the residue of the expenses of services the cost of which is not wholly covered by fees or prices, must be disbursed out of the proceeds of taxes. We may define a *tax* as a *compulsory contribution made to Government, under stated conditions, when the contribution is not a quid pro quo for a specific service rendered*. Thus the money paid by me for a dog licence is a compulsory contribution made to Government, but its payment is conditional upon my having a dog, and is not made on account of any service rendered by the Government in connexion with the dog. Again, when a Government carries letters and demands more for the service than is requisite to reimburse it, the excess charge is to be considered a tax.

The principle of equity in taxation.—As regards taxation, the first thing to settle is the principle according to which its burden should be distributed, which has been called the "principle of equity" in taxation. It is widely held at the present time that taxation should be designed so as to cause *proportional real sacrifice among the taxpayers*. When there is this proportional *real sacrifice*, people are left in the same relative positions after being taxed as before. The principle is not so axiomatic, however, as some have supposed it to be, even after the objection has been set aside that the utilities of income to different persons cannot be

compared. This objection may be set aside at once, because at least we can compare the utilities of different incomes to the same person, and for the broad purposes of taxation there is no harm in assuming that what holds of different incomes to the same person holds of different incomes in the possession of different persons. But, though in this way the principle of proportional real sacrifice may be represented as practically applicable, it cannot be laid down as self-evidently equitable. Plausible cases can at any rate be imagined in which it would not seem to be fair. Thus, if income happened to be subject to increasing utility, the taxation of the poor at a higher rate than that of the rich would seem to be entailed, since equal payments from both would mean a larger sacrifice for the rich than the poor; and nobody would allow that a higher rate of taxation of the poor could possibly be equitable. This difficulty might, perhaps, be met by arguing that as, in the imaginary case put, each addition to a small income is a step to the large final utilities of a bigger income, a part of the latter must be attributed to the small income, on the ground that the value of an end is naturally referred back to its means; but, even when a most liberal allowance is made on this account, it would be illegitimate to assume that the observance of the principle of proportional sacrifice would mean substantial justice. Besides, the question of whether people ought to attach the values that they do to certain things is raised, and also the question of the bearing of different taxation arrangements on faculty.

The truth is that the fundamental problem of equity in taxation cannot be resolved without an incursion into social ethics which is interpenetrated with sociology. All that we can affirm now, on the basis of a surface view, is that something in the direction of proportional real sacrifice is widely, and with good reason, held to be the ideal to aim at, as things are, in view of the facts (1) that diminishing utility, within

limits as regards its degree, holds sufficiently of income for it to be assumed with reference to taxation ; (2) that expenditure upon luxuries, however harmless and enjoyable they may be, counts for less with reference to national strength and vitality than expenditure upon necessities, broadly conceived ; and (3) that the excessive taxation of wealth is apt to discourage earning above a certain amount and the saving of capital. The principle under discussion, then, may be accepted as a rough working principle, if it is not too strictly interpreted.

It is sometimes affirmed that the right theory of taxation is the *faculty theory*, which, generally speaking, lays it down that a person should pay taxes in proportion to his power to do so. This theory, if it is narrowly regarded as independent of any considerations of sacrifice and social consequences, is as one-sided and defective as an abstract principle of equity. After the above discussion, an illustration taken from primitive conditions will show that, on a crude interpretation, it breaks down. The State, suppose, needs a particular piece of work to be done. Then, some say, for the whole community to turn out to do the work, and for each person to work according to his strength, would be for each to contribute to the service of the State according to faculty. But would this be the right thing? If all worked ten days, the man of great capacity would be doing absolutely more for the State than the man of little capacity. But the former would be making a smaller relative sacrifice than the latter, and the latter's sacrifice would probably mean a greater loss of vital well-being to the community than the former's. For the man of great capacity, who could make much in a year, in yielding up ten days of his time would be surrendering comparative superfluities, whereas the man of little capacity in yielding up ten days of his time would be surrendering comparative necessities. Equal sacrifices of time are equivalent to pro-

portional sacrifices of money income, but proportional sacrifices of money income are not equivalent to proportional sacrifices of the utility of income. However, the faculty theory may be so broadly interpreted and so qualified as to be made identical in its practical results with the theory of proportional sacrifice. The so-called *ability theory* is either the *faculty theory*, in the form first analysed above, or the theory of proportional sacrifice.

Progressive taxation.—Taxation which embodies the principle of proportional sacrifice must be *progressive*. By the principle of progression is meant in general that the higher the *clear net income* of a person the greater must be the *rate* at which he is taxed. There cannot be said to be complete agreement as to what should be understood by a person's *clear net income*. It is evident, however, that it is exclusive of expenditure incurred in earning the income which otherwise would not have been incurred. We have one example in the extra rent paid by a doctor for his house because he needs space for his surgery and consulting-rooms, and another in the cost of a doctor's carriage, in so far as it is used by him in his professional work. It is evident also that clear net income is exclusive of what a person who earns his living has to save in view of certain contingencies which may be disregarded by the person whose income is derived from investments. Moreover, the number of persons to be supported out of the income obviously enters into the problem.

The need of progressive taxation is generally based on what is known of the way in which the marginal utility of income usually falls with an increase in its amount. And, in so far as this basis is not found, progressive taxation can be defended on the ground that the consumption made possible by the smaller incomes is more important socially than the kind of consumption rendered possible by the later increments of larger incomes. It is vital to the community that the man

of small or moderate means should not be stinted in his consumption of necessities of efficiency, whereas the social interest in maintaining expenditure on luxuries is relatively small, and there is a positive gain in checking some part of it. However, it is to be remembered that the discouragement of earning and saving is a thing to avoid. Returning to the diminishing utility basis of progressive taxation, it may be laid down that in the great majority of cases the marginal utility of income so falls with an increase of income that taxation proportional to income exacts a greater proportional sacrifice from the poorer of any two persons, other things being equal.

Let there be two persons, X and Y, of whom the former has £200 a year and the latter £400 a year. Let the variation of utility with income be the same for both. For both let the utility of £100 a year be "*a*," and for both let the addition of a second £100 a year to income and utility "*b*," the addition of a third £100 utility "*c*," and the addition of a fourth £100 utility "*d*". Suppose a tax of 50 per cent is imposed on the income of each. Then ratios of sacrifice to the utility of the income left will be

$$\frac{b}{a} \text{ for X and } \frac{c+d}{a+b} \text{ for Y.}$$

It will be evident that for all likely quantitative relations between *a*, *b*, *c*, and *d* (which, according to the law of the diminishing utility of income, must be related so that *a* is greater than *b*, and *b* than *c*, and *c* than *d*), $\frac{b}{a}$ will be greater than $\frac{c+d}{a+b}$. At the same time we must observe that

$$\frac{b}{a} > \frac{c+d}{a+b}$$

does not necessarily follow from

$$a > b > c > d.$$

It is not possible to apply the principle of progression with such exactness as to realize equal proportional sacrifice, because (1) utility varies with income differently for differ-

ent persons, and even for the same person at different times ; (2) the variations of utility with income cannot be accurately measured ; and (3) the degree of incidence on different persons of many fruitful taxes cannot be minutely traced. But this does not really matter as the basis of taxation is a mixed one and it certainly cannot be laid down that taxation yielding precise equality of proportional sacrifice is necessarily best. *Of course, the important thing is that a taxing system as a whole should be properly progressive, and not that every tax in the system should be progressive.*

The words "degressive" and "regressive" have been applied to taxation, and when they are used, "progressive" is given a special meaning. *Progressive taxation* then denotes taxation involving proportional sacrifice ; while *degressive taxation* means that large incomes are taxed at a higher rate than smaller incomes, but not in a degree which involves as great a proportional sacrifice for the former as for the latter ; and *regressive taxation* means taxing the smaller incomes at a higher rate than the larger incomes.

Other principles of taxation.—Besides the principle of equity, other principles of taxation may be laid down. On these some comments are made below.

The principle of economy, as it might be called, is a two-sided principle which declares that, other things being equal, taxes should be chosen (1) the cost of collection of which is small in proportion to the proceeds, and (2) the loss occasioned by which to the country is small in proportion to the proceeds. Taxes which are not very productive, and are such that a large army of inspectors must be kept actively at work to see that they are not evaded, offend against the first clause of this principle. From the second clause and the theory of the incidence of taxes on commodities, we may deduce that it is bad finance to impose a tax on the products of an industry which is strongly subject to increasing returns (pp. 420-1).

Under this heading, we may also notice that taxes on luxuries may achieve miracles in the way of economy when costliness enhances the degree in which they are prized. Diamonds would go out of fashion if their price dropped to twopence apiece, but an enormous tax on wearing them might conceivably bring them into fashion again. Analogously the taxation of things the consumption of which beyond a certain point is detrimental is peculiarly economical—for example the taxation of alcoholic beverages—because it discourages what is undesirable and at the same time raises revenue. But here a sort of principle of State responsibility for public morals is equally involved.

The principle of convenience advises that, other things being equal, taxes should be so selected and arranged that the taxpayers are put to the minimum of inconvenience. Indirect taxes put the ultimate payers to no inconvenience, because the ultimate payers do not make a separate payment of the tax but pay it as a part of the price of the things taxed. It is an inconvenience to be constantly interviewed by an official, or to have to make complicated returns repeatedly; and it is the more insufferable the smaller the sums at stake. Since trouble is a cost, the principle of convenience, as so far expounded, may be regarded broadly as included in the principle of economy. But there are inconveniences of another order to avoid, if “inconvenience” be widely understood. In every country, according to the dispositions and prejudices of its inhabitants, certain acts on the part of tax-collectors would be resented as an infringement of the taxpayers’ rights and privileges. For instance, people are apt to be offended by the prying of officials, even when they, the taxpayers, are perfectly honest. With feelings which are deeply and widely rooted, it would be unwise of Governments to collide. Nothing damages a Government more than an unpopular tax, when its unpopularity is imbedded in political instincts,

whether the latter be reasonable or not. But this is a matter of politics rather than of economics.

To these principles is sometimes added what has been called the "*principle of clearness*," which affirms that people who have to make independent payment of taxes must be able to discover, and without difficulty, *what* they have to pay, *when* they have to pay, and *why* they have to pay. The time of payment must not be left for the collector to settle each year despotically. Moreover, no person must be assessed arbitrarily. Each person must be charged on principles, and be informed of the principles applied in determining what the amount due from him is. Also, the calculations involved in settling his obligations should be of a simple kind, so that he can verify them for himself.

In addition, under the principle of clearness, it is sometimes laid down that every person should know, or be easily able to ascertain, exactly how much he is paying directly and indirectly in taxes. This requirement, however, would seem to be impracticable, and it is by no means evident that it is desirable as things are. Always to know what you pay is always to feel what you pay. A perpetual chafing at fancied exactions of Government, and short-sighted penuriousness in matters of State expenditure, might result from giving prominence to the full burden of taxation in its incidence on individuals. The best of men are very human when they are paying taxes. On the other hand, a knowledge on the part of each taxpayer of exactly how much he was contributing, directly and indirectly, would be a check on any disposition of Government to tax disproportionately a section of the community, and would insure effective criticism of Government extravagance. And certainly it is advisable that, as a rule, exceptional expenditure, for instance on war, should be accompanied by an addition to the burden of taxation which is unmistakably felt. The realized burden of taxation should at

least serve as a barometer of expenditure ; but these points, again, are largely political.

In the foregoing exposition we have not exhausted by any means the outstanding maxims of taxation. The rest must be ignored, however, except for a hasty glance at a few points. Vacillation in taxing is to be deprecated. As it has been put paradoxically, an old tax is a good tax and a new tax is a bad tax. Time is needed for the community to adapt itself to a new tax, and in the process of accommodation much loss and inequity in incidence may be involved. Of other maxims, not the least important are those which have reference to the financial relations between local governments and the authority standing over them. Furthermore, we ought to notice the need of variety in a taxing system and a selection of taxes which, so to speak, supplement one another. Every tax tends to bear inequitably on some people, but when a taxing system is well designed it ought not *as a whole* to bear inequitably, to any sensible extent, on anybody. And finally there is the matter of *elasticity*. A taxing system as a whole should be elastic in the sense that its yield can be increased, within moderate limits, by raising in appropriate degrees the rates of all or some of its constituent taxes, without altering substantially the incidence of the system or the proportionate real burden imposed on the country.

Betterment and the unearned increment.—What is technically known as *betterment* comes upon the scenes when any public authority, in carrying out a work of public utility, incidentally confers value in a peculiar degree upon certain pieces of property. Thus, when a public bridge is thrown across a river, demand for the land about the two ends of the bridge is intensified. The claim has been advanced, and admitted in law in many countries, that a special public charge should be imposed upon the value thus incidentally created, which, since it is produced by the public authority,

has been adjudged as belonging in a sense to the community. Of an analogous order are taxes on war profits, which are obviously equitable and may properly be made very heavy.

Unearned increment, like betterment, relates to an accession to the worth of property which has been brought about without labour or sacrifice on the part of the owner of the property ; but, while betterment implies that the cause of the value is traceable to specific undertakings of governmental authorities, unearned increment, as commonly viewed, does not. Unearned increment, thus regarded, is the accession to the value of things which is the product of social growth or social progress. The augmentation of the value of the ground covered by a town, which is a never failing concomitant of the enlargement of a town, is unearned increment. When it is possible to locate it and measure it, many people hold that it is a singularly suitable object of taxation, since the community made it—involuntarily it is true—and its taxation cannot operate, therefore, as a discouragement of production or saving. However, when the taxation of unearned increment is first adopted, account should be taken of the prices at which property has recently changed hands as these may embrace some discounted anticipation of increased values. Nobody should be charged, in addition to his fair share of the burden of general taxation, a heavy unearned increment tax on an unearned increment which he has paid for.

Public debts including war loans.—The individual should so manage his expenditure that he is not lavish one year at the cost of having to pinch another year ; and the State likewise should so control its finances that the burden of taxation does not vary substantially and irregularly. For this and other reasons the State may have to borrow to meet unusual expenditure ; and it is justified in borrowing provided that it makes arrangements for the repayment of the loan before the unusual burden is likely to recur.

Loans may be funded or unfunded. A *funded loan* is embodied in stock, which can be sold, and it always relates to a lengthy period ; whereas an *unfunded loan* is not represented by stock and consists in borrowing for short periods, or subject to the condition that the money must be returned after due notice has been given by the lender. Unfunded debts, if of large amount, are usually condemned on the ground that they are apt to be more expensive than funded loans (because they are less liquid and the lenders may be put to the trouble of re-investing after a short time). But they are not always more expensive ; and they have a special attraction to some people as the full sum lent can be got back in a reasonable time, whereas if consols, say, are bought they may have to be sold eventually at a loss. *Floating debts* are made up of temporary loans or loans which may be called in rapidly at the will of the lender. They are therefore unfunded, but all unfunded debts are not floating debts. A municipality that started and kept on borrowing for terms of, say, three years would not have a floating debt proper till after three years. After that time, however, to keep up its debt, the municipality would have to secure renewals of the loans made to it or find other borrowers to take the place of those who wanted their money back. Floating debts of large amount are somewhat precarious because they might suddenly tend to run down. In this event, the borrower might be greatly embarrassed and put to heavy and unforeseen expense. When interest is low and capital is plentiful, the funding system is safest. But in times of great pressure on capital, the State may have to take risks and borrow as it best can ; and it would certainly seem inadvisable to create long-term loans when the rate of interest is high as they prevent the reduction of the annual burden of the debt when the rate of interest falls. During the war, enormous liabilities were contracted by the Government on short terms of repayment ;

and for years municipalities in England have largely relied on unfunded debts. In this connexion, emphasis may be laid on the distinction between continuous, or day to day borrowing, as it has been called, and borrowing all that is wanted for a specified purpose or period at once. If very large sums are required, the first plan is the cheapest and most fruitful, and has the additional merit of absorbing money as it is saved and not upsetting the money market. Municipalities have largely had recourse to it, and the Government has relied on it to no small extent in its recent war loans.

In connexion with borrowing, it should not be overlooked that there are definite limits to its extent. When a country is borrowing of itself, the first limit is furnished on the one hand by the amount that will be saved at home, under the inducement of the reward offered and of patriotism in times of national emergency; and on the other hand by the share of this that will be taken for business purposes. This limit was soon reached after war broke out. But it can be transcended, though there remains another limit which cannot. The ultimate limit is determined by the amount of saving that is physically possible, and the amount that must be absorbed by industry to enable it to function efficiently when this is cut down to the lowest figure possible. It goes without saying that the ultimate limit can only be reached as a result of far-reaching State control. All this follows, of course, from the fact that money only stands for goods and services, and that, in war say, the proportion of its income that a country can borrow is the proportion of its productive power that it can apply to the war, after retaining sufficient to satisfy the wants that it will not forego (according to the first limit), or the wants that it actually cannot forego (according to the second or ultimate limit). It is superfluous to add that there is a limit also to the amount that a country can get from another country (by sale of securities or direct borrowing) in

the amount that people will save there and the proportion of their savings that they will be willing to contribute in view of the inducement offered.

When the ultimate limit has not been reached, as it never can be practically, and the Government needs more than the people will contribute, it may try to force their hands for a time by creating more money, broadly regarded, either directly or through the bank. The extra money may be spent at once by the Government, or lent to the people (through the banks) on the security of their property and borrowed back by the Government to spend. The second course means that against the inflated currency, which will have to be dealt with some time, the Government has property pledged; whereas, if the first course is pursued, it holds nothing against it. But any such attempt to force the hands of the people is costly, as it effects its purpose by raising prices not only against the public but also against the Government; and it becomes increasingly costly and ultimately ruinous, particularly as the voluntary saving of those who were saving before may be checked in the degree in which the cost of living is forced up, so that a part of the Government's gain is reduced to a temporary one only, while its loss in higher costs remains. Finally, with reference to war loans, we may observe that the proportion of the productive power of the community that they absorb is less than the proportion that their money value bears to money income because the prices of things needed for the war rise most, under pressure of the exceptionally heavy demand for these things.

It goes without saying that the ultimate limit described above with reference to war loans holds also of taxation; but the practicable limit of taxation is reached long before that of the loan, both because of the attitude of the public, and because some people would still be left with income that

could be borrowed, after a system of taxation generally regarded as fair had pressed others to the limits of subsistence beyond which it was not desirable to go. One advantage of the tax is that it forces people who would not save to limit their consumption. Taxation and borrowing, of course, come to the same thing, except that the latter carries the burden of interest till it is paid off. Only it should be remarked that the Government can keep down the price to itself of things that it wants by taxing them, when it is feasible to do so. Taxes on things, by raising prices to private consumers, limit their consumption and leave amounts for the Government that could only have been obtained otherwise through an elevation of prices which it also would have had to pay—that is, so far as goods are bought by the Government in the open market and are not in any sense commandeered.

CHAPTER XXXIII.

THE INCIDENCE OF TAXES.

Nature of the problem of incidence.—We must begin our study of the incidence of taxes, as the subject to which we shall now give attention is commonly called, by drawing a distinction between the *impact* and the *incidence* of a tax. The *impact* is upon the person from whom the tax is collected, but the *incidence* is upon those who pay eventually. The process by which ultimate incidence is brought about is known as the process of the *shifting*, or *rolling*, or *repercussion* of taxes.

If the incidence of a tax is upon the same person as its impact, the tax is sometimes said to be *direct*. If incidence and impact are upon different persons, it is said to be *indirect*. But "direct" and "indirect" are sometimes applied to taxes to mark another contrast. By a *direct tax* is not infrequently meant a tax on persons apart from the nature of their callings, while by an *indirect tax* is meant a tax on trades, or on commodities or services, or things or events incidental to their provision. This is probably the commoner use of the terms, and it is the use to which they will be put here.

Some people speak of the shifting of taxes as if, in each case, nothing more happened than that a particular payment, or some part of it, was passed on from person to person until some individual was reached who could not pass it on to anybody else. Thus a tax of a penny a pound, say, is placed on soap in some country and the question is asked, Who

pay the pennies on the pounds of soap consumed in that country? This is far too simple a way of stating the problem of incidence. Take the example given and suppose that soap is not imported. The Government will raise a penny from each pound of soap consumed in the country, but the loss inflicted upon the taxpayers may be greater or less than the sum received by the Government. If the incidence of this tax is on the ultimate purchasers of soap, they pay what the Government gets, but they may be involved in contingent gains or losses which must be deducted from or added to this payment. If, in consequence of the diminished consumption of soap brought about by the tax, the price of soap, apart from the tax, falls, the taxpayers make a contingent gain; but if the effect of diminished consumption is the opposite, they suffer a contingent loss. Again, among the losses inflicted by the soap tax, we must certainly reckon the damage done to those who, as it is said, "escape" the tax, or some part of it, by giving up consuming the taxed article wholly or partially. To give up consuming what we like, and substitute for it what we desire less, is not a matter of indifference; and whenever the demand for a thing taxed is not absolutely inelastic, there is a sacrifice of this kind.

From the foregoing we may infer that it is not exactly correct to speak of the incidence of a tax. What we should say is "the incidence of the effects of a tax". However, the shorter phrase is in common use and serves to save words. The best way to deal with the problem of the incidence of taxes, so called, is to ask, first, What is the loss entailed? and, secondly, How is the loss distributed?

A few preliminary remarks on the conditions under which taxes may be shifted will not be out of place. If a tax is placed on all men over six feet in height, obviously no ways of escaping the tax are open to them except to emigrate or cease to exist. They cannot give up being six feet high. Therefore,

providing they elect not to emigrate, they must pay the tax. Similarly, if people are taxed in proportion to their wealth, and the tax amounts to only a small fraction of their possessions, those who earn an income are not likely to be induced by the tax to earn less. Consequently they cannot shift the tax. But if carpenters are taxed, while bricklayers, plumbers, and gardeners are not, the trade of carpentering will at once be made relatively less attractive than bricklaying, plumbing, and gardening. Perhaps only a few carpenters will forsake their calling in consequence, but certainly the proportion of the next generation brought up as carpenters will be reduced. Hence, ultimately, the supply of carpenters will shrink relatively, and the price paid for their work will be bound to rise. So the effects of the tax will be shifted from the carpenters on to the public who employ carpenters.

We shall trace in detail in succeeding paragraphs the incidence of certain taxes which have been selected to illustrate the theory of incidence. We shall only be concerned, however, with what tends to happen in the long run; though ultimate effects may be long delayed and obscured by intermediate effects, and be commonly overlooked in consequence, as the rise of the tide may be when we watch the waves. Further, we shall assume provisionally that the repercussion of taxes cannot be in any degree negatived, though it may be delayed, by social friction. We suppose that people will break their habits to escape a tax, and that, when a trade is taxed, people in the trade will not be depressed into a lethargy which will rivet the burden upon them and their children. Of the latter point some notice will be taken later.

Taxes on income and property.—When people are taxed in proportion to income, the bulk of the incidence is upon the persons taxed. But in the case of these taxes, as of most others, if the rate is high so that the saving of capital is appreciably retarded, the community as a whole is also

affected to a slight extent in that the cost of living rises or is prevented from falling. A tax on personal expenditure has occasionally been recommended on the ground that it would impose little or no check upon saving.

The incidence of taxes on property, when the holding, in shares or otherwise, of capital devoted to production is not relatively discouraged, is identical, broadly speaking, with the incidence of income taxes, that is to say, it is upon the owners of the property taxed.

The incidence of taxes on the transference of property at death is similar to that of property taxes, but the former taxes may have the peculiarity of falling, so to speak, between two stools. They do not fall on the people who make no provision, by insurance or otherwise, for the payment of the taxes on the property which they leave, and the beneficiaries are only deprived of what they never possessed.

Taxes connected with land.—The problem of the incidence of taxes on land, or land and any capital fixed in it, bewilderingly complicated though it appears when unsystematically presented, readily lends itself to a piecemeal solution. We shall, therefore, aim at tracing the principles involved by examining a few leading cases in the abstract.

(a) *Taxes on pure economic rent* fall upon the persons who receive the rent. This proposition holds of all true rents, whatever their nature, including personal rents. It is assumed, of course, that the taxes are made to apply to all rents of a given class. The conclusion follows from the fact that the taxes, being on rent, do not affect cost directly or indirectly. Were a tax imposed on the rent of land only when the land was used for growing turnips, say, then a part of the incidence would be upon the consumers of turnips, because some land would be withdrawn from turnip-growing and devoted to other purposes.

(b) The incidence of a *tax on land proportional to the*

quantity of its tangible produce may receive attention next. Such a tax makes an addition to the cost of obtaining the produce which is the same for every unit of the produce. Consequently, if the demand for the produce is absolutely inelastic, price will rise by the amount of the tax, and consumers will lose what the Government gets. And rent will be as before. Rent is the difference between the aggregate costs of the produce and the total receipts for it. The costs are increased by the tax multiplied by the amount of the produce; and the receipts are increased by the same amount. Hence the difference between them is what it was before.

But, as the demand for the produce cannot be absolutely inelastic, its price will rise to some extent. Less will then be consumed, and when less is consumed the marginal cost will fall (see pp. 305-7). Hence price will rise by less than the amount of the tax and rent will fall. Consequently, in the loss occasioned by the tax landlords will share.

This demonstration holds whether the produce of the land is the fruit of the earth, or milk (on dairy farms), or cattle and sheep, or office-room (on building sites), or house-room, or what not.

(c) In setting out to trace the effects of *a tax on the annual value of what is produced from the land* (including accommodation in buildings), we may take the case of house property to illustrate, as this gives us the problem of rates in an easy form. Each house is taxed according to the annual value of site and house. Consider houses exactly alike, and suppose the one at the situational margin pays a rent of £40. This is a charge for the house alone; the marginal site may be assumed provisionally to have no value. Another house pays £60 a year. This is £40 for the house and £20 for the site. Let each be taxed (or rated for local purposes) 25 per cent. Suppose, first, that the demand for houses is quite inelastic. Then for the house at the margin £50 must be paid,

namely £40 rent and £10 rates. For the house £40 must be paid as before (as we shall understand better after studying on pages 420-1 the incidence of taxes on commodities, which include buildings), because this is its cost of production and management expressed as an annual payment. Then, for the other house, the occupier would pay at most £50, plus its situational value of £20, that is £70 in all, including rates. He would not pay more because the situational value would remain as it was, and we suppose that he occupies the house because he was the highest bidder for it. Consequently, the rent of this house would have to drop from £60 to £56, because £56 plus 25 per cent (for rates) equals £70, the most that would be paid for it and any charges upon it. The site value will, therefore, fall from £20 to £16, since £40 must still be paid for the house. That is to say, in this case and like cases, if the demand for houses is quite inelastic, the tax paid will fall on the house and the site in proportion to the amount of each in the total rent ultimately paid. But actually, as the demand for houses is not quite inelastic, the situational margin would rise, and situational rent would fall still more.

If, instead of a residential house, business premises are on the site, the tax which does not fall on the ground rent falls on those who ultimately consume the utilities furnished in the business premises. This conclusion follows from the fact that otherwise the profits of businesses using much land would be reduced and people would be less eager to enter them.

This demonstration holds only of cases in which the quantity of accommodation that can be provided on a given site is fixed, and no doubt there are many such cases. There are also many cases in which the quantity of accommodation that can be provided on a given site is not fixed. Blocks of flats are erected in the centres of some big cities which would never be erected in the suburbs, and these blocks may be of various heights. In these cases, rates would cause less use to be made of central sites (lower buildings would be

placed upon them), as will be proved in the next paragraph, and the boundaries of the town would be thrust outwards. Now, ordinarily, the area for building in the immediate outskirts of a town is extensive, and the inconvenience of living a great distance from the centre is not appreciably less than the inconvenience of living a somewhat greater distance from the centre. Consequently the chances are that the value of a given amount of accommodation in the centre would not be appreciably affected by the extension of the town's suburbs. We may conclude, therefore, that it is so highly probable as to be certain for practical purposes that the annual value of central sites, and the aggregate site value of the town, would both fall, in the long run, in a greater degree than they would if a fixed quantity of accommodation were always provided when a site was used.

That rates would cause less use to be made of central sites is easily demonstrable. Take a block of flats with eight stories. Suppose that on the eighth story a rent of £90 a year will be paid for accommodation which could be obtained in a house of two stories on the outskirts of the distant suburbs for £30 a year. Then, for the situational conveniences of the flat, £60 is being paid, and the provision of the flat on the eighth story may be taken to cost in all, with profits, a sum of which a rent of £90 a year is an equivalent. Suppose that there are no rates at first, and that rates of 50 per cent on rent are then imposed; and assume provisionally that the demand for house-room is quite inelastic. After the imposition of the rates, the man in the marginal suburban house pays rates of £15 a year on his £30 house, that is, £45 in all. Then the man in the top flat would pay £45, plus the value of his situation, which was £60, and, on the suppositions made, remains pretty much the same. So he would pay £105 in all, supposing, for the sake of argument, that the value of his situation is still £60. And as rates are 50 per cent of rent, this means that he would pay a rent of £70 and rates amounting to £35. Rather than pay more he would get himself a £30 house built on the country side of our marginal £30 house in the suburbs. But a rent of £90 only just covers the cost of providing his flat. Consequently, after the rates were imposed, no more flats with eight stories would be built. Finally, observe that this result, whatever the rates, could not possibly be prevented by a

rise in the value of central accommodation, because such a rise could only be brought about by a spreading out of the town for which *ex hypothesi* a curtailment of the height of central buildings is essential.

It will be realized at once that the theory of the incidence of taxes on the annual value on the spot of the produce of farms is similar in form to the theory of the incidence of taxes on building sites, used for business purposes, when the amount of accommodation obtainable from a site is not to be taken as rigidly fixed.

(d) The theory of the incidence of *a tax on all land per acre*, which one would think should be easy, is in parts difficult. The theory is easy enough, if the tax is imposed on all land, whether used or not, and cannot be evaded by giving up the ownership of land. In this event, it must fall entirely on landlords, because the use made of any piece of land, and marginal cost, would not be affected. But when the tax is imposed only on land which is devoted to some service or other, the theory may become involved.

Let us begin our examination of the incidence of the latter tax by taking first a very simple case where the theory is simple. Consider building plots, on each of which the same, and an invariable, amount of accommodation is provided. If the demand for these plots is quite inelastic, rent after the imposition of the tax would be as before. The reason is that the owners of marginal sites can escape the tax by withholding land from use. The whole incidence of the tax would be on the occupiers of the residences, or on the consumers of the commodities or services proceeding from the premises, as the case might be, if demand were quite inelastic, but if it were not, rent would suffer some reduction.

Complexities are introduced into the problem when we suppose that a variable quantity of accommodation can be furnished on a site. On this supposition, we have circumstances similar to those of land in agricultural use. What

follows may be read as relating either to farming land or to building land in the long run—only the long run would be much longer in the latter case. A tax proportional to acreage on land in use would throw out of use all land of which the economic rent per acre, under the conditions created by the tax, was less than the amount of the tax. And, as other land would be worked more intensively, the marginal cost of its produce (whether it were corn, or cattle, or buildings, or anything else) would rise, and consequently the price of its produce would rise. Hence consumers could not possibly escape being hit; and, in fact, they would almost certainly have to pay substantially more than the proceeds of the tax. The proof of the latter proposition is too elaborate for insertion here; as is also the proof of a correlative proposition which holds of this case, namely, that the aggregate paid in rent would, with the same degree of likelihood, be increased despite the loss of rent on the land thrown out of use.

With reference to land taxation, there are three other points which ought to be mentioned. The first is that the incidence of land taxes on persons is naturally affected by leases, because leaseholders are tied to their land for specified periods. The leaseholder is to be viewed as landowner in this matter, except with respect to taxes on the rent received by landlords, and apart from any provisions which modify the leaseholder's liabilities according to changes in circumstances. The second point is that a tax upon unoccupied land which could be used, brings a portion of it at least into the market and so tends to lower the value of sites. When such a tax is resolved upon, it is not desirable that it should be so heavy as to discourage all withholding of land from present use in view of future needs. And the third point to notice is the *principle of amortization*. When a recurrent impost is placed on the possession of a thing, allowance is made for the charge when

the thing is purchased. Hence, a land tax which reduces rent lowers the capital value of land. Similarly, a tax on the *transfer* of non-reproducible property lowers its exchange value by the amount of the tax. In this connexion, it is noteworthy, though apparent, that the value of land is sensitive to expectations of change in the rate and nature of taxes affecting its net earnings.

Taxes on commodities and services.—This section will have no reference to import and export duties, which will be specifically treated later, nor to conditions under which supply is monopolized. Taxes on commodities may be treated as additions to their costs of production. If the demand for a taxed commodity, in the supply of which competition rules, is wholly inelastic, its price must rise by the amount of the tax, and the incidence of the tax must be entirely on the consumers. But demand is never wholly inelastic. Consequently, after a tax has been imposed on a commodity, less of the commodity will be bought, and the cessation of consumption will itself cause loss in the manner described above. Moreover, when a smaller quantity is produced than before, the marginal cost of production may rise or fall. If it rises, price will rise by more than the amount of the tax, and the loss of consumers will be increased accordingly. If it falls, the loss of consumers will be correspondingly reduced.

From these conclusions, two maxims may be deduced. The one is not to tax things the demand for which is elastic, other things being equal, when the prime object of the tax is revenue; because, when demand is elastic, a small tax will cause a large contraction of consumption. The other is not to tax things the production of which is subject to marked increasing returns, other things being equal, because to do so is to throw away the advantages of increasing returns.

The theory of the incidence of taxes on services is identical with that of the incidence of taxes on commodities. A com-

modity is merely a service indirectly rendered. And taxes on *transfers* of reproducible things, or on contracts relating to their provision (like *stamp duties* on bills of exchange), when they are indispensable, are evidently additions to the cost of producing or delivering things and are, therefore, to be classed with taxes on commodities.

Diagrammatic treatment of taxes on commodities.—The conditions of demand and supply of a commodity subject to decreasing returns, and of another subject to increasing returns, are represented in figs. 20 and 21 respectively. A tax of dh per unit is

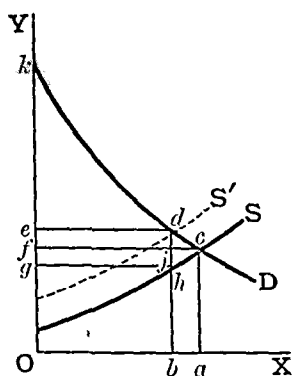


FIG. 20.

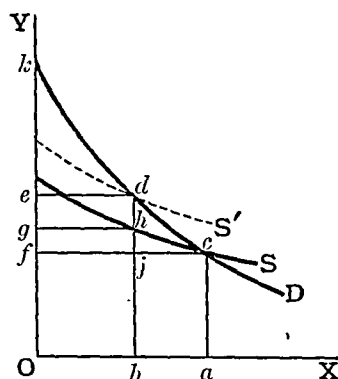


FIG. 21.

imposed on each commodity. Consequently the supply curve in each case is raised from S to S' . The output in each case is reduced from Oa to Ob . The loss of consumers' surplus is $efcd$, that is to say, consumers suffer a loss equivalent to a loss to them of $efcd$ in money. The gain of the Government in money is $eghd$. In fig. 20, relating to diminishing returns, $eghd$ is greater than $efcd$, but it would cease to be if the inclination of S were so slight that $fghj$ were no greater than cdj . In fig. 21, relating to increasing returns, $eghd$ is less than $efcd$, and is bound to be. The reader can construct a figure for himself to show that, in the case of constant returns, the excess of loss of consumers' rent over the gain of the Government would be approximately half of the tax per unit multiplied by the reduction of output.

Taxes on monopolies.—A tax of a lump sum on a monopoly rests entirely on the monopolist, provided that his output is so arranged that his net takings are maximized, as it would tend to be in the absence of any of the limitations on his liberty of action discussed on page 190. If, in this event, he is taxed £1000 a year whatever his output, on reducing his output he would meet only with additional loss. A percentage tax on monopoly revenue would have a similar incidence, if we suppose that the trouble saved when output is reduced is practically negligible. A tax on the output would probably induce the monopolist to restrict his output and, thus, some of the incidence would be on the consumers. But the rate of such a tax could be made so to rise with price as to stop restriction of output. Of course, were the tax in any of these cases so large as to swallow up the monopoly revenue and something more, the output would ultimately come to an end.

Import and export duties.—We must confine ourselves here to the broadest issues only. In what follows, we shall deal mainly with import duties. From the principles brought out in their examination, the effects of export duties can be readily deduced. The reader may find it helpful to conceive of import and export duties as additions made to the cost of transport between countries exacted by the parties imposing the duties.

Let us take first *protective import duties*, and bear in mind that we are only concerned here with what is called their incidence, and not with arguments for protection and free trade. These arguments we have briefly reviewed in Chapter XXX. We are now leaving out of account certain advantages, apart from the cost of things, which are claimed for protection on the one hand, and on the other hand certain advantages of a similar order that are claimed for free trade. The broadest way of treating this question is to consider first the world effects of protective import duties, and then their distribution.

Now, we may assume that, in the absence of the duties, countries would, as a rule, engage most in the industries they could prosecute to the greatest advantage. By the duties, some of their activities would be shifted into less profitable channels: hence, there would be loss, apart from the payment of the duties. However, this doctrine does not hold universally; conceivably some of the new channels might be more profitable than the old ones, and, in so far as they were, there would be gain instead of loss. But a balance of loss may be taken as the usual thing.

This being the world effect ordinarily, we have to investigate next the incidence of the loss on people in the country imposing the protective import duties and on people abroad. Let the country which imposes the import duties be France. And let us provisionally disregard all cases in which France, or any one of the countries exporting to it, exclusively consumes or produces an article of international trade. Such cases of what might be loosely termed national monopoly present certain peculiarities, but they have little or no application to the generality of trade. In the remaining case, we have France exporting what other countries produce also, and importing what other countries are also consuming. Now, the imposition of import duties on certain goods by France, if they are not prohibitive, means that in the new state of trade, when a position of equilibrium is again reached, the prices of these goods in relation to the prices of other things must exceed their cost of production abroad, expressed in the same way, by the amount of the import duties, as otherwise these goods could not continue to be imported. This new position of trade can be brought about by a re-adjustment of the magnitudes of different industries (*a*) abroad, or (*b*) in France. If the extent of the industries affected abroad, directly or indirectly, is large in relation to the extent of the corresponding industries in France, the result will

be attained mainly by method (*b*) ; but, in the opposite case, mainly by method (*a*). It is evident, therefore, that the probable loss that has been investigated, when reckoned per head, must usually be large in the taxing country in comparison with what it is abroad (because foreigners will not be involved in any substantial industrial re-adjustments) when the sum of all the industries affected abroad is very large in proportion to the size of the corresponding industries in France.

It must be remembered, however, that a loss to the world is not bound to result from all protective import duties ; and, further, it must be noticed that, even when it does, there may be a gain to the taxing country, the balance of loss to the world being due to losses abroad. Thus a country exporting in the main agricultural produce which was subject to decreasing returns, if it taxed imported manufactures, might gain more through the cheapening of its agricultural produce to the home consumer (in consequence of the diminished export, following on the restricted imports) than it lost through dearer manufactures.

Exceptions there certainly are to the general statements made above, but nevertheless the broad conclusion cannot be resisted that in most cases protective import duties will not in the long run do much harm per head to people abroad ; whereas, in the countries imposing them, people will commonly have to pay the duties (which their Government gains of course), or a great proportion of them, and suffer something in addition through being cut off from what are to them economical sources of supply. It is superfluous to add that, if any import duty is prohibitive, the treasury of the taxing country gains nothing, though there is likely to be a loss, as previously demonstrated, and this loss is likely to fall most heavily on the taxing country.

The striking analogy between the theory of protective im-

port duties when circumstances are unfavourable and the theory of taxes on the output of industries subject to decreasing returns will be apparent ; and it will be perceived that an import duty, accompanied by a corresponding tax on any home production of the dutiable thing, is simply a tax on consumption and does not present the peculiarities of the protective import duty, unless it is designed to protect the production of a substitute.

Let us now try to trace the effects that may be expected when the consumption or production of a commodity affected by a duty is confined to one country. Above we assumed provisionally that no such national monopoly, if we may properly call it monopoly, was involved in the trade.

Suppose that some country has such a monopoly of consumption of some article. Say, for instance, that China alone consumes opium. Then, if China put an import duty on opium, and her demand for opium was very elastic, and opium was produced according to diminishing returns, China would profit largely on balance. Suppose, next, that some country has such a monopoly of production of some article. Suppose, for instance, that Borneo alone can produce nutmegs with facility. Then, were Borneo to place an export duty on nutmegs, and were the demand for them inelastic, Borneo would certainly gain heavily at the expense of foreign countries.

Incidence of a taxation system as a whole.—To conclude this chapter a few words must be said of the reactions that may succeed the incidence of all the taxes in a taxing system. These might be called the *secondary reactions*. They are slower in their operation and tend to be more extensively counteracted by social friction than the *primary reactions*, but they may alter both the burden of taxation and its distribution.

Secondary reactions are brought about by the effect of taxes upon saving and upon the power and willingness of people to raise themselves or their children in the social scale. For instance, were the taxes of a country to press with exceptional severity upon the class of people with incomes of less than £100, the flow of people from this class to the next higher class would almost certainly be retarded (though a position in the latter class would be made relatively more attractive), because the means at their disposal to enable them to raise themselves or their children would be reduced. Power to mount up in the social scale seems at present to be a much more important regulator of the degree of vertical movement, among the masses of the population, than the relative attractiveness of incomes in different grades. If the relative numbers of the people in the lowest classes were ultimately increased by the tax, the burden of the tax upon the community would be made heavier, because the national income would shrink when more people than before were doing work of small value. And of the burden, thus increased, the share of the poorer people would be magnified, for they would suffer a reduction in wages, owing to the relative increase of their numbers, in addition to having to pay the heavy taxes. The earnings of the classes above them would rise relatively to theirs, because the numbers in these higher classes, taken as a whole, would relatively diminish. It must be remembered, however, that vertical mobility suffers many retardations. Finally, it is necessary to take into account the depressing effect which the reduction of small incomes has on those who earn them. The ambitions of parents for their children might be so damped by heavy taxes that the children's opportunities would be curtailed out of all proportion to the limitation of the parents' ability to provide them.

In order to illustrate the secondary reactions on taxes as a whole, a case has been selected in which the means possessed

by people play a large part in determining their choice of occupations for themselves and their children. In other cases, means have no influence, but a substantial alteration of the relative attractiveness of different positions in the social system might have an appreciable influence. As regards the secondary reactions which affect saving, the dependence of saving on the means to save will be obvious without comment.

BOOK VIII.

DEVELOPMENT OF POLITICAL ECONOMY.

CHAPTER XXXIV.

FROM EARLY TIMES TO ADAM SMITH.

THE purpose of this chapter and the next is not to give a digest of the views of economists in different ages, but to trace very generally the progress of Political Economy. An introductory sketch is all that can be offered: properly to understand the development of Political Economy, it is necessary to read economic literature side by side with economic history.

Early and mediæval times.—Political Economy has had a long, if frequently uneventful, history. *Xenophon* broke sufficient ground in his *Economics* to call for notice, but his point of view was largely domestic. Nor did *Aristotle* overlook economic considerations in his encyclopædic survey of the social sciences, though he brought little thought to bear on economic analysis. Both then, and afterwards under the Roman Empire, however, economic speculations were rare and rudimentary. And the Middle Ages were even more barren, except for the occasional attention given, mainly by ecclesiastics, to such special questions as poverty and interest on capital, that was more practical in its fruits than theoretical. It was not until the Renaissance that the modern world really began to awaken to the problems of economics.

For the long neglect of economic questions as a whole and the sudden blaze of interest in them, sufficient reason can be found. In the ancient world, production was carried on piecemeal by inferior classes in the community, and practical thought was concentrated mainly on the political aspects of human affairs. Economic organization was not so much a part of the system of civilized life as the ground in which it was rooted. Throughout the Middle Ages, again, the governing classes were preoccupied with war and the political structure of cities and States. Economic organization remained on the whole parochial while nations were being made politically. It is not surprising that the first notable stirrings of economic thought were not aroused till trade and industry began to be controlled for national objects, and social disorders were generated by social changes. When the Feudal System flourished, the weaving of the economic cash nexus was only in its initial stages; and as, in addition, agriculture was pursued year in year out on the Manor in a customary way, and largely on a subsistence rather than an exchange basis, by classes whose relations to one another never altered, economic theories of rent and agricultural organization were unlikely or out of the question. At most, treatises on estate management and husbandry were to be looked for. And, as in agriculture, so in industry, custom largely ruled, its observance being enforced by guilds, while the unit of manufacture seldom extended far beyond the household. Broadly speaking, there was no economic literature because economic activities were taken for granted and not yet incorporated in the recognized problems of the national life; and also because there was very little literature of any kind.

With the dawning of capitalism, however, the extension of commerce and the increasing dependence on money, attention was naturally drawn to currency matters and the rate

of interest. Nicholas Oresme's work on Money did not appear until 1373. But long before that, and even in ancient times, controversy had arisen over the payment of interest. Eventually, the conflict between political and business requirements, on the one side, and morals or religion, on the other, was resolved, under the pressure of necessity, by the distinction drawn between interest that was and was not usurious. Various arguments were used. Thus the lender ran risks and it was agreed that he was entitled to insurance payments; and, as against the view that, money being sterile, no interest could legitimately be claimed merely for a loan of money, it was allowed that the money might be used to purchase what was not barren, for instance flocks and herds, and that in this event the lender might claim a share in the results of their fecundity. Again, as money used in industry and trade clearly yielded profit, the right to interest was conceded under the fiction that the lender was a partner in the undertakings to which the money was devoted. Exceptions such as these to the law of the Church against usury being admitted, it was only natural that, with the growth of capitalism and the increasing use of loans in trade and politics, the prohibition of interest should have ended in being confined to extortionate payments wrung out of people's necessities. A doctrine that originated in care for the weak and needy could not survive in its early rigidity after the chief borrowers became the rich and powerful.

The transition from mediævalism.—Many old problems were magnified, while new ones were created, by the dissolution of the mediæval order, commercial expansion, the discovery of the New World, and the distribution of its treasure. From these mixed causes mixed effects followed, which may be separated into two classes, namely the social and the more narrowly economic. The old fabric of society was being destroyed and reconstructed; and this in itself, apart even from

the misery which it caused to large numbers in the community, naturally excited speculations about the social system at a time when the bold Greek spirit of inquiry had been recovered through the revival of learning, and Plato's "Republic" and Plutarch's "Lycurgus" were again being read. *Sir Thomas More* wrote his "Utopia" in 1516; and, after a long interval, other noted ideal commonwealths were put forth, among the authors of which *Francis Bacon* holds a high place. These exercises in the theoretic architecture of society were no less political than economic, or more so, and half-poetic and literary, though not intended to be entirely fanciful. The conception of the deliberate creation of social systems was not likely to be dismissed as utterly fantastic, after the State had asserted control over the Church and was already designing or actually trying machinery for the relief or removal of poverty and unemployment. And, as the notion of the ideal community was born anew in the economic and political convulsions of the sixteenth and seventeenth centuries, so it was revived once more in the disturbed period at the end of the eighteenth century and the beginning of the nineteenth. But little was achieved, in the way of social studies, beyond the half-serious "Utopia" in the post-mediaeval transition age. The one specific economic question of a social kind that was made definite and discussed with judgment was the question of pauperism: *Vives* wrote his "Treatise in Pauperism" (1526) at the Court of Henry VIII.

The enormous expansion of both internal and external trade before the end of the sixteenth century forced into notice certain of the more fundamental factors in commerce. Monetary machinery was one of these; for the more a community engages in trade, the greater is its dependence on money. In England the currency had depreciated through debasement, clipping, and rubbing, and this was the more serious in view of the fact that the outflow of silver from

America had also reduced its purchasing power. It was in connexion with the recoinage in the reign of Elizabeth that *Sir Thomas Gresham* emphasized the generalization which has become a constituent part of economic doctrine under the name of "Gresham's law". An anonymous author, now thought to be *John Hales*, discussed monetary and other subjects in 1549 in a work entitled "A Discourse of the Commonwealth" which was not published till 1581; and on the subject of money, *Bodin* published twice, in 1567 and 1578.

Mercantilism and its critics.—It was not merely currency matters pure and simple, however, which excited most attention in this age, but the whole broad question of external trading relations, including those with the Plantations, as the Colonies were then called, which raised the widest issues. Increasingly numerous pamphleteers maintained that foreign trade could be encouraged and controlled in the interests of national wealth and power, and recommended the regulation of industry, and in some cases the overseas carrying trade (by Navigation Acts), with the same end in view. The idea was to foster all that was supposed to contribute to national wealth or strength. This teaching, which is known as Mercantilist, was by no means mistaken throughout, though it was marred by a tendency relatively to over-value the precious metals, foreign trade, the production of materials, a dense population, and State action. With the contemporary discussion over its tenets and consequences, trade economics made its real beginning.

The Mercantilist policy was a gradual growth, and its adoption had already been extensive before the sixteenth century. Of statesmen, Colbert, perhaps, went furthest along the lines of its policy. The first comprehensive economic writer in France, *Moncrétien de Watteville* (or *Vasteville*), whose "Treatise on Political Economy" appeared

in 1615, had pronounced mercantilist leanings. Of English writers, the most eminent were *Thomas Mun*, author of an essay on trade with the East Indies (1621), and a posthumous work, "England's Treasure by Foreign Trade" (1664); *Sir Josiah Child*, remembered for his discourses on trade of 1668 and 1690; *Sir William Temple*, and *Charles Davenant*. All were moderate mercantilists; and, generally speaking, moderate mercantilists were at least as much concerned to disprove some of the extreme tenets of Mercantilism as to support it in substance. *Mun*, the most outstanding, believed that it was desirable to aim at a favourable balance of trade, but not necessarily with each country, since an unfavourable balance with one country might result in a more favourable balance with another; hence he advised the export of money to bring in more money ultimately. Another distinguished Englishman, *Sir Dudley North*, attacked the system of prohibition ("Discourses upon Trade," 1691). Objections were also advanced by two other English writers of high repute, whose economics were less exclusively concerned with trading questions, namely, *Sir William Petty*, author of "Political Arithmetic" (written in 1671 but not published until 1691) and other works, and *Locke* the philosopher. *David Hume*, whose penetrating discussions of economic questions in two volumes of essays (published respectively in 1752 and 1753) did much to prepare a broad way for Adam Smith, was equally an opponent of Mercantilism. Despite the trenchant criticism of Mercantilism, however, an "Inquiry into the Principles of Political Economy," with a Mercantilist bias, was issued by *Sir James Stewart* in 1767; but it counted for little, in view of the tendencies of the time, and sank into obscurity after the phenomenal success of Adam Smith's powerful and more attractive book. In Germany, mercantilist teaching flourished for generations. In connexion with the work of the Council (or Kammer) in many German

States, chairs of what were called Cameralistic sciences had been established in Universities. Out of these studies Political Economy developed, and for many years it was distinctly mercantilist. But eventually critics made themselves heard in Germany, and also in France, as well as in England.

The Physiocrats.—The next school of economics to influence the world of thought and action was known as the Physiocratic. It took its origin as much in the economic transformation wrought in the eighteenth century, and even before, as in intellectual advance. The striking feature in the new conditions was the strength of private initiative which had for long worked beneath the surface in prescribed channels, and now broke through the crust of political and social regulation and convention in an unrestrainable boldness of enterprise. We see its ascendancy in both industry and trade; and, in relation to Mercantilism, in the defiance of the great trading companies by the "Interlopers," or persons undertaking, on their own account, foreign ventures which trespassed on the legal or customary monopolies of the Chartered Companies. This pushing individualism had been rendered possible by the growth of private wealth and the development of credit and banking.

The Physiocrats maintained that the social system worked of itself to the greatest advantage; that State and corporate intervention always substituted a less for a greater advantage. It was because they believed in the operation of a sort of natural law in the economic system that they were called Physiocrats, though they called themselves "Economists". The conception of natural law in social affairs, which is clearly akin to the ancient idea of the *Jus Naturae*, was common to many writers of the time and reappears in Adam Smith. At least, as applied by the Physiocrats, it brought out the notion of the working of law, in some sense, in economic matters as in external nature. Like most schools, the Physiocrats be-

came doctrinaire, and they presented their real discoveries entangled with absurdities. Most interest was excited by the doctrine, strongly emphasized by some of them, that manufactures are "sterile" in that they do not yield a *produit net* like the land. On the theory of the *produit net* (which foreshadows the correct conception of rent), they founded their proposal of the single tax. Most of them held that agriculture alone was truly productive, in that it added to the quantity of things, whereas manufacture merely altered the form of things and commerce their distribution. The confusion in this view between mass and value is apparent; and of the same confusion, Mercantilist teaching was by no means guiltless.

The first elements of the system were published by Quesnay in the "Encyclopédie," and they were developed mainly between 1763 and 1775. The leading Physiocrats were Quesnay—author of that most abstract statement known as the "Tableau Économique"—and Gournay, while Dupont de Nemours and Mercier-Larivière were well-known exponents. Gournay softened the rigours of the school by rejecting the crude doctrine of the unproductiveness of industry and commerce. He concentrated on the importance of a system of natural liberty, and originated the celebrated phrase *laissez faire, laissez passer*. Cantillon, a French merchant of Irish extraction, had put forward, in 1755, the fundamental ideas embodied in the principles of the Physiocrats; but it was Quesnay and Gournay who created a school of thought. Of this school, *Turgot* was also an adherent, but his "Reflexions on the Production and Distribution of Wealth" (1766) is as notable for its presentation of economics as a systematic whole as for its support of the opinions held by the group to which he belonged. The prominence attained by Physiocratic teaching was due in part to the financial necessities of the State in France which preceded the Revolution. Taxa-

tion had become a matter of the first order of importance, and the Physiocrats were largely drawn into the problem of taxation by their peculiar views.

Adam Smith.—The position of *Adam Smith's* "Wealth of Nations" is unique, and few works have come nearer attaining immortality. A volume at least would be needed to pick up all the threads of its author's relations to his forerunners and successors. A remarkable feature of his work is that it stands at a parting of the ways and reaches so far both backwards and forwards. With reference to the past, the "Wealth of Nations" is both assimilative and critical; and with reference to the future, wonderfully constructive seeing that it was written before the industrial revolution, as we generally understand it, was sufficiently advanced to be properly appreciated. There is no indication that Adam Smith foresaw modern conditions; yet the "*Wealth of Nations*" naturally ranks among modern books and is correctly regarded as the foundation of modern Economics. Though Adam Smith did not guess what the nineteenth century would be like, he hoed and harrowed the ground as if he did, and he presented the human side of economics as it was still found to be long after his death. He was helped to his conception of economics as a systematic whole by the work of the Physiocrats and particularly of Turgot. But his conception went beyond that of any of his contemporaries and predecessors, possibly because it went even beyond the domain proper of Economics. Adam Smith envisaged a comprehensive social philosophy, which he regarded as divided into three departments embracing respectively (a) conduct in general, (b) economics, and (c) law and politics. His "Theory of the Moral Sentiments" is in effect the first part of this system; the "Wealth of Nations" is the second; and, when death cut short his labours, he had for long been engaged on the third. On his instructions, this unfinished

work was destroyed, but happily the lecture notes of a student who had attended this part of Adam Smith's course at Glasgow have been discovered and published.

The "*Wealth of Nations*" is divided into five books. The first treats of "the causes of improvement in the productive powers of labour, and of the order according to which its produce is naturally distributed among the different ranks of the people". The second treats of "the nature, accumulation, and employment of stock," and the third of the "natural progress of opulence" as contrasted with the results of attempts to direct and regulate it. The fourth part consists almost entirely of an assault on Mercantilism and discussion of the details of economic policy associated with it; and in this book there is a brief examination of Physiocratic teaching. The fifth book is concerned with public finance. To the Physiocrats, Adam Smith is kindly disposed, because the end of economic freedom was theirs as well as his, and he had been in touch with some of the most distinguished of them when in France. He is emphatic, however, in exposing the cardinal error which gave rise to the over-emphasis of the importance of agriculture; though the same blemish actually reappears faintly in his own discussion of the effects of using capital in different ways. In assailing Mercantilism, on the other hand, Adam Smith is harshly polemical, for one reason, we may suppose, because reform had yet to be achieved; still, the coolness of his underlying judgment is apparent in the concessions that he makes. Of restraints on trade, he was, moreover, impatient because of his belief in the existence of a sort of natural law, which, in the absence of interference, worked to the attainment of the best possible results for the community. This doctrine, which governed the teaching of the Physiocrats also, he probably took over from the philosopher Frances Hutcheson; but with Adam Smith it was as much a reasoned economic conclusion as a

superstition, and such faults as he fell into should be attributed in no small measure to the imperfections of his technical apparatus in the then primitive state of economic science. No doubt his distrust of politicians, whom he deemed "crafty and insidious," predisposed him to accept Hutcheson's doctrine; but Adam Smith was nothing if not shrewd, and he was under no illusions about the incentives of the ordinary business man. For the details of his purely economic analysis, the reader must be referred to the "Wealth of Nations". The germ at least of modern theories will be found where there is error, and error is seldom made prominent or left undiluted with truth, for Adam Smith was not only gifted with insight but was essentially a man of sane and cautious judgment. With the "Wealth of Nations" this account of the development of Political Economy comes to a natural halting place.

CHAPTER XXXV.

FROM ADAM SMITH TO THE PRESENT TIME.

The classical school and some of its critics.—Within but a few decades of the publication of the “Wealth of Nations,” the industrial system was feeling the convulsions of what was almost a re-birth. Not Adam Smith’s period, but the next was the age of steam and steel, and it was not until steam and steel began to dominate it, that production fell into the mould of the factory system proper and the large scale organization associated with it. The first great economist to write comprehensively in the new age, with the understanding that came of growing up with it, was John Stuart Mill, whose merit it was to produce an adequate Political Economy in the general form in which we are familiar with that study to-day. But, before this, other eminent writers had made contributions to the subject, notably Ricardo, Malthus, and Senior.

In chronological order, the work of *T. R. Malthus* comes first, but it is not of prime significance in the development of economics as a whole. Malthus is celebrated for his discussion of the population question, and not for any stamp which his thought impressed on economics in general, though he also wrote a Political Economy. In 1798, he published his essay on the “Principles of Population” in its first form, to give a precise reason for his scepticism about the value of *Godwin’s* and *Condorcet’s* dreams of social perfectibility. Malthus

put forward the pessimistic view that, given the imagined ideal, growth-in-numbers would soon level the general state of prosperity down again by swallowing up the material benefits accruing from it. He laid it down baldly that the human race tended to increase in a geometrical progression and food only in an arithmetical progression; so that population would, inevitably, outrun the means of subsistence, but for the positive checks of war, pestilence, and famine. Later, he went into the whole question again, and supplemented his more or less *a priori* speculations with inductive and historical inquiries. The first edition of the new book appeared in 1803. In this work, he materially modified his original conclusions, and added to the "positive checks" the preventive one of moral restraint. Malthus was not the first to draw attention to the problem of population; and it certainly cannot be affirmed that he stated it for all time. Indeed, many of the forces governing population are still exceedingly obscure; and, unquestionably, Malthus' pronouncements, in their application to social policy, would have been different, if he had foreseen the advance that was to take place in man's control over nature.

After Adam Smith, the next great step in economics was taken by *Ricardo*, though previously *Lord Lauderdale* and *Bentham* made some contributions, including criticisms of Adam Smith, and others had written on the Continent to whom some reference will be made later. *Ricardo* was certainly one of the most original and path-breaking of the world's economists. Though a man of affairs, his interest was in fundamental theory, and his work is not, therefore, characteristic of any particular age, except that it embodies the early nineteenth century assumption of the existence and inevitableness of an all-pervading competition like an atmosphere. The main strength of *Ricardo* lay in his remarkable power of abstraction and generalization; but, unfortunately,

he was not equipped by nature or education with an equal power of scientific exposition. Generalizing so widely as he did, he was bound to move in an environment of changing assumptions, but he generally left his reader to guess what they were at each stage of his argument. Doubtless, he never analysed and marshalled them for himself, any more than the painter explains to himself why he selects in the particular way that he does in interpreting nature. Ricardo presents us always with the bare anatomical skeleton—with nothing that is not absolutely essential, to his mind; though he never explains why the things omitted are irrelevancies. He had none of Adam Smith's historical sense or extensive grasp of social facts; his work is masterly in its clear-cut (though not clearly expounded) conceptions and rigid reasoning, but it is as hard as concrete. Moreover, Ricardo's "Principles of Political Economy and Taxation" (1817) does not contain a complete science; it is rather a collection of essays on unsettled economic questions—which were generally left settled for the time being and clamped in an inflexible theory by the time Ricardo had finished with them. He is famed especially for his doctrines, or improvements in doctrine, with reference to rent, money and international trade, which have survived in their substance nearly a century of further research; while much of his remaining teaching, if not at all points satisfactory in itself, had the merit at least of concentrating inquiry where a great part of the truth was eventually found. The danger of all work like Ricardo's is, of course, that it gives rise to the doctrinaire. The chief fault of the school which he created probably lay in their too ready imposition of their theories where dogmatism was out of place, and their unfortunate attempts to read the future, without the aid of history, and in the sole light of abstractions from the present. One of the ablest of Ricardo's critics was Richard Jones, who attacked him, in a work printed in 1831,

mainly on the question of distribution and on inductive grounds.

~~The next writer after Ricardo of outstanding capacity is N. W. Senior. His "Political Economy" appeared in the "Encyclopædia Metropolitana" in 1836, and was republished in 1850. He also wrote numerous lectures and essays. The distinctive feature of the Political Economy is its incisive deduction. Admittedly, it is too abstract, but it marked a stage in the evolution of theory. It is easier to qualify sweeping generalizations than to draw the generalizations that are of fundamental importance, and bring them into due relation and harmony with one another. As regards detail, Senior is best known, perhaps, for his abstinence theory of interest. Senior was a master of theory, but he by no means allowed his theory to shut him out from observation. As a member of the famous Commission on the Poor Laws, he appears to have faced the facts in a proper spirit, and his writings on trade unions and factory legislation ("Historical and Philosophical Essays," 1865), if mistaken, were certainly not *a priori* in substance, though possibly a web of fact woven on to a warp of doctrine.~~

In this sketch of economics after Adam Smith, ~~we have passed over James Mill and numerous other writers with about the same or greater claims to notice, as our purpose is to concentrate on landmarks. James Mill, who frequently discussed economic questions with Ricardo, and was a disciple of Bentham's, himself wrote a small Political Economy, but he is chiefly remembered as the father of the celebrated John Stuart Mill. Of the latter's work, it is impossible to write at moderate length, and there is no space to write adequately. Some broad references must, therefore, suffice—which is not altogether a matter for regret seeing that Mill may still be read with profit even by those who have no interest in the development of economics. He was~~

no historian, but he was almost-everything-else; and in this respect—in the breadth of his studies—he comes nearer to Adam-Smith than any other of the economists of the past. Like Adam Smith, he was a social philosopher and like Adam Smith he had applied his mind to political science. With his all-round knowledge of social facts, and his grasp of logic and method, he was peculiarly well-equipped for the task to which he set himself of fitting together the fragments that made up the Political Economy of his day, filling in the gaps, and welding the whole together in a coherent system. His "Political Economy," (1848) was an achievement, but, naturally, it fell short of perfection. The parts on wages, for instance, were obviously open to criticism even in the light of the analysis of his day; though he had a better answer to *Thornton's* attack on the wages fund doctrine than he seemed to think, and to *Longe's* also for the matter of that. Again, Mill's system lacks cohesion in places, some parts being only loosely attached to the rest, because of his failure to detect throughout the underlying identity of principle. Thus, he lays it down that distribution is independent of production and price-determination, and is modifiable according to human institutions while the latter are not. In fact Mill had not reached the organic conception of a social system, despite his respect for the teaching of Comte. But his admission of elasticity in distribution was a sign of grace, and marked an advance on the absolutism of some of his predecessors.

From Adam Smith to the time of Mill, Political Economy had progressed abroad as well as at home. In Germany *Rau*, *Nebenius*, *Hermann*, and *Thünen* were notable among those who carried on the Smithian tradition, and the last in particular gained repute through his argument drawn from the abstract conception of the isolated state. Of the critics of Adam Smith, *Müller* was the most original. In France,

J. B. Say was an attractive expositor of the fundamental ideas of the "Wealth of Nations" who did more than repeat. On the other hand, *Sismandi* and *Dunoyer* struck out lines of their own. The most brilliant protagonist of the competitive system in the latter part of this period was unquestionably *Frédéric Bastiat*. His was the type of mind which is at its best, in the application of theories to affairs, when stimulated by controversy. Fortunately, the stimulus was not lacking, and he produced two works glowing with an animation that is inimitable outside France, his "*Economic-Sophisms*" and "*Economic Harmonies*". The mention of Bastiat must bring on to the stage two other economists, namely *List* and *Carey*, as the three stand, to some extent, in a triangular relationship to one another. *Friedrich List*, who died in 1846, four years before Bastiat, struck the national note in economics and called his book the "*National System of Political Economy*" (1841). Its tone is not unlike that of Mercantilism, but it is not identical. As regards Free Trade, List thought it a good starting policy and a good finishing policy, but, for the period in between, he recommended a system of regulation specifically designed to further national ends. *H. C. Carey*, an American of Irish extraction, may have been influenced to some extent by List, but his conclusions are not throughout of the same fibre. His final views appear in his "*Principles of Social Science*" (1859). He has much to say of general scientific interest, particularly in the way of criticism of the Ricardian doctrine of rent from the standpoint of a new country, but what brings him into juxtaposition with the two writers already mentioned is his plea that protection is needed for some countries to prevent the exhaustion of their natural resources. This fundamental idea has since been developed in America.

The historical and socialistic reactions.—By the middle of the nineteenth century, the stream of reaction against the

Classical School had become a flood, which did not indeed sweep it away, though happily denuding it of its dogmatism and self-complacency. ~~The reaction was made up of the Historical School and the Socialists. The former is usually understood to embrace three overlapping groups, namely the Realists (with and without an ethical bent), the Historical School proper, and the Nationalist or Political writers.~~ The Realists, pure and simple, maintained either that the deductive method was worthless and should be replaced by direct detailed investigation of things as they were, or that it should be supplemented by realistic inquiries. The Historical School, narrowly conceived, like the Realistic, may be roughly divided into parties. On the one hand, the more arrogant saw no use in theory and proposed the substitution of Economic History for Economic Theory. They contended that historical investigation could solve all the economic problems that can be solved. On the other hand, the most modest proposed to apply, through history, a corrective and auxiliary to the analytical method. ~~Needless to say, just as extravagant claims were made by some of the Realistic and Historical Schools, so they were not unknown on the part of the~~ theorists. The main points in the controversy between the opposing parties have been discussed in Chapter II, but here it remains to add that the reaction, which was led by *Roscher*, *Hildebrand*, and *Knies*, attracted a numerous company, of whom *Brentano*, *Schmoller*, and *Wagner* are the most prominent. Indeed, it swept through and dominated German Universities, though not invariably in an extreme form, and time mollified some of its earlier asperities. In association with the historical and realistic movement, ~~the National or Political idea of Economics,~~ which we have already noticed in List, was also developed, mainly in later years. In France, the militant Historical School never secured a firm footing, though historical and realistic work of value

has been done there, and *Comte's* teaching had much in common with it. In England, *Thorold Rogers* and *Cliffe Leslie* voiced some of the new ideas.

Many of the new German school were semi-socialistic in the sense that they admitted some of the charges of the socialists against society, and believed in using the engine of the State to a considerable extent. Hence, a group of them were known as the Socialists of the Chair—or Academic Socialists—but the complexion of their socialism was not, as a rule, highly coloured. And socialism is far from being all of one kind. That of *St. Simon*, if it may be called socialism, is of the Utopian order, and aristocratic in spirit in the way in which *Carlyle's* teaching, which was influenced by it, was aristocratic. *Fourier* also dealt with ideals as he conceived them, but as the communism that he recommended was to be made up of small groups of not more than 2000 people, called *phalanstères*, his schemes were shattered by the spread of the large-scale system of organization. *Robert Owen's* ideas at one time had much in common with *Fourier's*. These ideal creations appeared just after the French Revolution, when the notion of State-making seemed less fantastic than it does to-day.

Economic socialism, as it may be termed, attained notoriety through the teaching of *Karl Marx* and *Engels* coupled with the activities of *Lassalle*. *Karl Marx* and *Engels* gave to working-class grievances, and the vague popular social betterment notions for which the worst aspects of the industrial revolution were responsible, both arguments and definition, which were derived in part from certain English socialistic writers and from *Rodbertus*. In his work on "*Capital*," *Karl Marx* demonstrated from a misreading of *Ricardo* that capital resulted from the spoliation of the wage-earning classes. But whether he misread *Ricardo* or not, is to-day of little moment. The essential point is that the doctrine

that labour is the sole source of value, and has, therefore, a right to the whole produce of industry, on which his demonstration rests, is not held by any economist to-day. He also maintained, again using an economic generalization which is undoubtedly untrue, namely the so-called iron or brazen law of wages (pp. 334-5), that the wage-earner could not benefit from progress; and it became a cardinal tenet of economic socialism that the poor must get poorer in non-socialistic surroundings. Thus, Karl Marx found justification for some drastic change in social organization. Moreover, he contended that reconstruction was inevitable, because the competitive system was self-destruction. The commercial crisis was, in his view, the incurable disease, inherent in competitive organization, which was bound to get worse and worse and eventually compass its dissolution. This he tried to establish by an historical survey, and he confidently foretold that so overwhelming a crisis would be reached at last that recovery would be impossible, and a new world would have to arise from the ruin. What exactly it would be like he never satisfactorily explained, but it was to mean the socialization of the means of production. And, in his opinion, when the collapse came, industry would be in a form suited to the assumption of a dictatorship by the proletariat, for he regarded it as a law of competition that great businesses should destroy smaller ones and increasingly absorb the market.

Time has disproved the sensational parts of the teaching of Karl Marx and of Engels, who was closely associated with him; but, without any distinctive socialistic economics, it needs no ingenuity to make out a case for social amelioration. Socialistic economics were after all but the counterpart of the equally baseless optimism of the *laissez-faire* school at its worst. Since the time of Karl Marx, State socialism has received most support. This won its position through the

C. Menger, *Wieser*, and *Böhm-Bawerk*, investigated the roots of value on lines not unlike Jevons' but without the mathematics. They penetrated further into the psychological determinants of value than previous thinkers and thus opened up a new field of research. Böhm-Bawerk's work is confined to Capital and Interest, and he has at least revealed depths in this subject that were unsuspected before he wrote. The inquiries of the Austrian School have done something to encourage certain interesting lines of development in American economics. Of other writers of this age, mention may be made of *Flawcett*, *Bagshot*, whose "*Lombard Street*" is a classic, *Sidgwick*, and the evergreen *Francis A. Walker*, who exercised a great influence on the development of economic studies in the United States, and exhibited in all his writings sturdy common sense and remarkable clarity of thought and lucidity of expression.

The awkward task of appraising the work of prominent living writers will not be essayed here, but a few words must be said of the part played in the progress of economics by Marshall and Edgeworth whose pens are still active. This exception must be made to round off our account of the evolution of Political Economy, because their contributions have in no small measure shaped the science as it is expounded in this book. Both, as mathematicians, had an equipment that was of great value for the development of theory as they found it.

Alfred Marshall has never neglected the realistic side of economics, but the part of his work upon which emphasis will be laid now is the theoretical. Marshall, for the first time, revealed the unity of the economic system, and presented it as a coherent whole of inter-related parts, functioning in mutual dependence upon one another. In his account, a theory, as one may say, takes the place of disconnected theories. To some extent, but in a less degree, the same kind of unification has been worked out by *J. B. Clark*.

in the United States. It is true that Marshall's great book, "The Principles of Economics," first published in 1890, is unfinished, Vol. I only having appeared so far; but this volume is complete in itself, and though, for instance, it does not cover money, the principles contained in it can be so obviously applied to money, that the theory of money in certain books issued since may be not incorrectly attributed to Marshall. International trade is another large section that is not included, but the theory of this sort of exchange was profoundly affected by the teaching of the Principles; and, as a matter of fact, in an unpublished memorandum that has been read by numerous economists, Marshall has sketched the doctrines that are now commonly expounded. Coming to detail, without repeating what has gone before or attempting to be exhaustive, we may notice, among Marshall's additions to economics, the clear distinction between the long and the short period; the doctrine of consumer's surplus; the doctrine of quasi-rent; and the expansion and refinement of the rent concept.

F. Y. Edgeworth has confined himself to the minute investigation of particular problems with the instrument of mathematics. His researches have appeared for the most part in the "Economic Journal" and other scientific journals in the United Kingdom and abroad: only one book stands to his name, a brief and early work entitled "Mathematical Psychics" (1881). He writes almost entirely for the economic expert, and is, therefore, little known to the general public, but the results of his investigations are steadily working their way into the recognized body of economics. His earliest discovery was the contract curve, which has a close bearing on questions of distribution and foreign trade. After this, his most important inquiries were probably those relating to international trade, the incidence of taxation, profits, and monopoly and differential charges.

Political Economy has by no means reached a position of settlement. The Historical School is still making good its undertakings, while it goes without saying that in a changing world the task of realism never ends; the field of sociology is being broken into; and theory is being unceasingly revised and improved. When time has been given to grasp the full significance of what has occurred in consequence of the war, some striking developments may be witnessed.

APPENDIX.

SELECT LIST OF BOOKS.

AFTER mastering these outlines, those who desire to make a more complete study of Political Economy should read:—

Marshall, *Principles of Economics*.

Nicholson, *Principles of Political Economy*, three vols.

Taussig, *Principles of Economics*, two vols.

Of recent, or comparatively recent outlines in English, or treatises on a smaller scale than the two referred to above, mention may be made of those by Bullock, Ely, Fetter, Flux, Gide (translated from French), Hadley, Nicholson, Seager, Seligman, and Walker. The student who aims at getting an all-round knowledge of Political Economy would benefit from examining a few of these works, each of which naturally differs from the present volume in some respects—either in point of view, manner of treatment, or matters of detail.

The most important general treatises in foreign languages are:— in German, those by Conrad, Cohn (Vol. II on Finance, translated), Philippovich, Roscher (Vol. I, translated), Schmoller (translated into French), and Wagner (translated into French); in French, those by Cauwès, Colson, Gide, Landry, Leroy-Beaulieu, and Pareto; in Dutch, Pierson's two volumes (translated); and, in Italian, Graziani's work.

The literature of Political Economy is so voluminous that it is impossible to do more now than indicate some few of the most modern books in English which might be perused by those who are specially interested in particular sections of the subject; and it is not likely that I have been so fortunate as to have omitted no work which ought to be mentioned. In putting forward the list that

follows I may offer a word of caution. It must be remembered that many parts of Political Economy, particularly parts which touch conflicting interests, or opinions as regards State action, are controversial. Consequently many economic works, which are not intended for beginners and deliberately made impartial, must be read in an especially questioning frame of mind. In the appended collection, books have been placed in the class which seems to have the first claim upon them though they may rightfully belong to more than one class.

SCOPE, METHOD, FUNDAMENTAL IDEAS AND CONSUMPTION : J. N. Keynes, *Scope and Method of Political Economy* ; Patten, *Consumption of Wealth* ; and Smart, *Introduction to the Theory of Value*.

CAPITAL AND INTEREST : Böhm-Bawerk, *Theories of Interest and Positive Theory of Capital* (both translated with introductions by Smart) ; Cassel, *Nature and Necessity of Interest* ; Gonner, *Interest and Saving* ; Irving Fisher, *Nature of Capital and The Rate of Interest*.

MARKETS : Emery, *Stock and Produce Exchanges* ; Jones, *Economic Crises* ; Mitchell, *Business Cycles* ; Robertson, *Study of Industrial Fluctuation* ; Withers, *Stocks and Shares*. (For books on the Money Market see under the heading "Money and Banking".)

INDUSTRIES : It must suffice here merely to mention that numerous studies of particular industries and businesses have been made.

TRUSTS AND COMBINATIONS : Ely, *Monopolies and Trusts* ; Jenks, *The Trust Problem* ; Levy, *Monopoly and Competition* (trans.) ; Macgregor, *Industrial Combination* ; Macrosty, *The Trust Movement in British Industry* ; Ripley, *Trusts, Pools, and Corporations*.

CO-OPERATION : Fay, *Co-operation at Home and Abroad* ; *Industrial Co-operation*, edited by Catherine Webb ; Wolff's *People's Banks*.

INTERNATIONAL TRADE : Bastable, *International Trade* ; Fisk, *International Commercial Policies* ; Goschen, *Foreign Exchanges*.

MONEY AND BANKING : Bagehot, *Lombard St.* ; Clare, *Money Market Primer* ; Conant, *Principles of Money and Banking* ; Darwin, *Bimetallism* ; Irving Fisher, *The Purchasing Power of Money* ; J. M. Keynes, *Indian Currency and Finance* ; Layton, *Introduction*

to the Study of Prices; Withers, *The Meaning of Money and The War and Lombard St.* Jevons, Laughlin, Nicholson, and Walker have also produced works on Money. Small books on banking have been written by Attfield, Dunbar, and Sykes.

WAGES AND LABOUR QUESTIONS: Beveridge, *Unemployment*; Bowley, *Wages in the United Kingdom in the XIX Century (statistical)*; Brassey and Chapman, *Wages and Employment and Social Betterment*; Gilman, *Profit-sharing*; Knoop, *Industrial Arbitration*; Layton, *Capital and Labour*; Pigou, *Methods of Industrial Peace and Unemployment*; Schloss, *Methods of Industrial Remuneration*; Taussig, *Wages and Capital*; Webb, *Industrial Democracy*; Ashley, *Adjustment of Wages*.

MATHEMATICAL ECONOMICS: All who are sufficiently equipped with a knowledge of mathematics should read at least the Appendix to Marshall's *Principles of Economics*. Other mathematical expositions in English are: Cunyngname, *Geometry of Political Economy*; Edgeworth, *Mathematical Psychics*; the Appendix to Flux's *Economic Principles*; Jevons, *Theory of Political Economy*; Wicksteed, *Alphabet of Economic Science*.

GENERAL: Cannan, *Wealth*; Carver, *Distribution of Wealth*; Clark, *Distribution of Wealth and Essentials of Economic Theory*; Hobson, *The Industrial System and Evolution of Modern Capitalism*; Pantaleoni, *Pure Economics* (trans.); Pigou, *Wealth and Welfare*; Sidgwick, *Political Economy*; Smart, *Distribution of Income*; D. A. Wells, *Recent Economic Changes*; Wicksteed, *Commonsense of Political Economy*; Wieser, *Natural Value* (trans.).

PUBLIC FINANCE AND TAXATION: Bastable, *Public Finance*; Pigou, *Protective and Preferential Import Duties*; Seligman, *Shifting and Incidence of Taxation*, and *The Income Tax*. Introductory Manuals on Public Finance have been prepared by Armitage-Smith, Daniels, and Plehn.

PUBLIC ECONOMICS: The field of Public Economics, including Socialism and Economic and Social Legislation, is too extensive for any satisfactory recommendations as to reading to be made in this brief bibliography. Portions of many of the works mentioned above cover some of the ground.

STATISTICS: Bowley, *Elements of Statistics and Elementary Manual of Statistics*; Giffen's *Essays*; Jevons' *Essays*; Mayo-

Smith, *Science of Statistics*; Udny Yule, *Introduction to the Theory of Statistics* (highly mathematical).

HISTORY OF POLITICAL ECONOMY: Bonar, *Philosophy and Political Economy and Malthus and his Work*; Cannan, *Production and Distribution in English Political Economy*; Cossa, *Guide to the Study of Political Economy*; Gide and Rist, *History of Economic Doctrines*; Haney, *History of Economic Thought*; Higgs, *The Physiocrats*; Ingram, *History of Political Economy* (Ed. by W. A. Scott); Price, *Political Economy in England*.

Portions at least of the works of some of the following writers in English should be read by those who are making themselves acquainted with the history of Political Economy: Adam Smith, Ricardo, Malthus, Senior, J. S. Mill, Cairnes, Cliffe Leslie, and Jevons.

ECONOMIC HISTORY: Introductory Sketches of English Economic History have been written by Cheyney, Cunningham and McArthur, Meredith, Price, and Townsend Warner. The most comprehensive works are Cunningham's and Ashley's. The latter is not yet completed. Treatises on special topics and periods cannot be mentioned here.

JOURNALS: The official journal of the Royal Economic Society is the *Economic Journal*. Notices of the contents of current issues of the chief journals abroad will be found at the end of each number. The *American Economic Review* is the organ of the American Economic Association. Of American economic journals there are many. The *Journal of the Royal Statistical Society* and the *Quarterly Publications of the American Statistical Association* should be added to the list of journals in English.

DICTIONARIES: Palgrave's *Dictionary of Political Economy* will be found of value as a work of reference. The most exhaustive dictionary is the *Handwörterbuch der Staatswissenschaften*, edited by Conrad, Elster, Lexis, and Loening (8 vols.). Schönberg's *Handbuch der Politischen Oekonomie* contains many interesting monographs.

OFFICIAL PUBLICATIONS: The statistical and other publications of Public Offices contain much useful information. Some of the reports of Commissions and Select Committees are of particular value.

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